

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1785.—Vol. XXXIX.

LONDON, SATURDAY, NOVEMBER 6, 1869.

(WITH SUPPLEMENT) (STAMPED .. SIXPENCE, UNSTAMPED .. FIVEPENCE)

The Mining Exchange, London.

ADVERTISING SHARES AT FIXED PRICES.

THE MEMBERS of the MINING EXCHANGE are PROHIBITED by its RULES from ADVERTISING SHARES directly or indirectly at FIXED PRICES. W. E. JOHNSON, Secretary. Finch-lane, London, Nov. 3, 1869.

M^r. JAMES CROFTS, STOCK AND SHAREBROKER,
No. 1, PINCH LANE, CORNHILL.

(Established 1842.)
Mr. Crofts transacts business in the way of PURCHASE or SALE of every description of stocks, but particularly BRITISH MINES, at net prices. All orders meet with the utmost punctuality, and advice given as to the nature and eligibility of INVESTMENTS when required.

HOLDERS of mining shares DIFFICULT OF SALE in the open market may find purchasers for the same through Mr. Crofts' agency. Also parties requiring advice how to act in the disposal or abandonment of doubtful mining stocks may profitably avail of Mr. Crofts' long experience on the market in all cases of doubt or difficulty, legal or otherwise.

* Mr. Crofts specially RECOMMENDS the purchase of GREAT ROYALTON shares. The prospects of the mine are unequalled, and a rise in price of shares certain.

SPECIAL BUSINESS, either as BUYER or SELLER, in VIRTUOUS LADY shares.

M^r. W. H. BUMPUS, STOCK AND SHAREDEALER,
44, THREADNEEDLE STREET, LONDON, E.C., has FOR SALE the following SHARES, free of commission:—

50 Anglo-Brazil, 10s. 3d	75 Gen. Brazil, 3s 3d pm	20 Prince of Wales, 24s 6
30 Australian Gold, 10s. 3d	10 Great Laxey, £19½	50 Port Phillip, 25s.
1¼ prem.	30 Great No. Laxey, 19s.	20 So. Condurow, 36s.
55 Cuddra, ss. (call paid)	0 Great Vor, £12½	5 Spear Moor, £19½
50 Chontales, 16s. 3d.	20 Holmbush and Kelly	50 Taquaril, 13s. 3d.
25 Caldbeck Fells, 32s 6d	Bray, 4s.	50 W. Prince of Wales, 4s
25 Don Pedro, £3½ pm.	35 Lovell Consols.	30 W. Drake Walls, 4s 6d
50 Drake Walls, 19s.	15 Marke Valley, 27½	70 West Godolphin, 18s.
15 East Seton, £2¼	50 No. Treskerby, 12s.	10 Wheal Ury, 4s.
10 East Lovell, £16½	30 New Birch Tor and	5 W. Rose Down, £28½
50 E. New Lovell, 13s 9d	Vittler, 15s.	50 West Maria, 32s.
20 East Grenville, £3¼	40 Pestarena, 27s.	75 Yudanamuta, £11 39
50 Frontino, 22s. 6d.	35 Princess of Wales, 8s.	

M^r. WILLIAM WARD,
95, BISHOPSGATE STREET WITHIN, LONDON, E.C.

M^r. THOMAS SPARGO, STOCK AND SHAREDEALER,
224 and 225, GRESHAM HOUSE,
OLD BROAD STREET, LONDON, E.C.

JOHN RISLEY, (SWORN) STOCK AND SHAREBROKER,
48, THREADNEEDLE STREET, LONDON, E.C.
Bankers: London and Westminster, Lothbury.

M^r. Y. CHRISTIAN, STOCK AND SHAREDEALER,
11, ROYAL EXCHANGE, E.C.
Bankers: Bank of England.

M^r. T. A. MUNDY, STOCK AND SHAREDEALER,
38, BISHOPSGATE STREET WITHIN, E.C.
Bankers: City Bank.

M^r. WILLIAM SEWARD, STOCK AND MINING SHARE BROKER,
19, THROMMORTON STREET, LONDON, E.C.
Every description of shares BOUGHT and SOLD at the best market prices.

M^r. JOHN MOSS, STOCK AND SHAREDEALER,
ST. MICHAEL'S CHAMBERS, 42, CORNHILL, E.C.
Business as BUYER or SELLER in Frontino, Chontales, Don Pedro, General Brazilian, and Taquaril Gold shares.
Bankers: City Bank, Finch-lane, E.C.

Established Twelve Years—Twenty-four Years' Experience.
M^r. F. W. MANSELL, STOCK AND SHAREDEALER,
1, PINNER'S COURT, OLD BROAD STREET, LONDON, E.C.
Bankers: London Joint-Stock Bank.

M^r. THOMAS THOMPSON, MINING OFFICES,
19, OLD JEWRY CHAMBERS, LONDON, E.C.
Mr. THOMPSON strongly recommends the purchase of Holmbush and Kelly Bray and Royalton Mines at their present prices; also shares in a mine on the Van lode in the Llanidloes.

M^r. T. ROSEWARNE, STOCK AND SHAREDEALER,
81, OLD BROAD STREET, LONDON, E.C.
T. R. has BUSINESS in all kinds of marketable stocks and shares at close prices of the day.
Money advanced to any extent on good mining shares.
Office hours Ten to Four. Bankers: Bank of England.

SILK AND CO., HOME AND COLONIAL AGENCY,
32, REGENT STREET, PICCADILLY CIRCUS, W., and 36, MARK LANE, (No. 73), E.C., have BUSINESS in the following shares:—
Caldbeck Fells 29s. to 30s.
Drake Walls 18s. „ 20s.
East Lovell £12½ „ £13½
East Caradon 5½ „ 5½
Great Laxey 19 „ 20
New Lovell 35s. „ 37s 6d
Prince of Wales 23s. „ 25s.
CARDIGAN BAY CONSOLS (Silver-lead, Copper, and Blende), £5 shares, fully paid. We beg to call the immediate attention of our clients to this valuable property, further improvements having taken place during the past week.

SILK AND CO., having had their attention drawn to the WANT of a MEDIUM for the PURCHASE and SALE of SLATE QUARRIES and SLATE QUARRY SHARES by a great many parties interested in this important branch of trade, are PREPARED to RENDER EVERY FACILITY to this end, and invite information from those interested.
Crown Quarry shares, £ 3¼ to £ 4¼
Cwmelol 3½ „ 4¼
A SLATE QUARRY FOR SALE.
FRANK LIMMER, Secretary.

M^r. WILLIAM MARLBOROUGH, 1, GREAT ST. HELEN'S,
BISHOPSGATE STREET, LONDON, E.C. (Established 16 years), has FOR SALE the FOLLOWING SHARES, at net prices:—
30 Australian United, 1 Devon Consols, £124.
22s. 3d. prem. 5 East Lovell, £15½.
20 Budnick Cons., £3½. 20 East Seton, £2 3s. 9d.
20 Bronfloyd, £3 10s. 6d. 10 East Caradon, £6½.
25 Bwch Consols, £3. 15 Frank Mills, £3 14s.
20 Brynpostig, 20s. 25 Frontino, 22s.
35 Chontales, 15s. 30 Gt. No. Laxey, 17s 6d.
10 Chiverton, £3 14s. 40 Gen. Brazilian, 3s. 3d.
3 Cargoll, £10¼. 20 Great Vor, £14½.
40 Caldbeck Fells, 31s 3d. 20 Great Western, 41s.
2 Ding Dong, £24 12s. 25 Great Rock, £2s.
20 Drake Walls, 18s. 9d. 25 Hingham, 20s. 9d.
20 Don Pedro, £3 8s. pm. 10 Marke Valley, 47.
40 Mining Associa., 17s 3

W. M. strongly recommends the purchase of HAMMETT and NANTROS CONSOLS shares, both of which are likely to soon command very much higher prices.

M^r. GEORGE BUDGE, STOCK AND SHAREDEALER,
No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 20 years), is a SELLER at net prices of:—
3 Minera, £168; 5 Van, £28½; 10 Bwch Consols, £3; 100 Bradrain Consols, 25s.; 25 Ashton, £9; 1 Devon Great Consols, £112½; 5 Tincroft, £18½; 2 South Caradon, £34; 2 Wheal Margaret, £12; 25 Drake Walls, 19s. 3d.; 70 Okel Tor, 16s.; 50 East Rosewarne, 5s. 9d.; 30 Pedn-an-drea; 100 Wheal Ida, 8s.; 40 West Prince of Wales, 4s.; 100 Redmoor; 80 Great South Tolgus, 17s. 6d.; 50 Bronfloyd; 75 East New Wheal Lovell, 18s. 3d.; 5 West Caradon, £9; 2 Providence, £38; 5 East Seton; 20 Caldbeck Fells, 31s.; 150 Anglo-Brazilian, 9s. 9d.; 100 Frontino and Bolivia, 22s. 6d.; 250 General Brazilian, ¼ prem.; 50 Panulilio, £2 4s.
Mr. BUDGE can recommend the purchase of shares in a progressive mine making profits and fast approaching a dividend state.

THE LONDON DAILY RECORD—
STOCK AND SHARE LIST.

Published every evening at 5 o'clock.
Forwarded by same night's mail to subscribers.
Entered at Stationers' Hall, July, 1866.

Contains the latest closing prices of any share-list published; showing the rise and fall in railways, banks, foreign stocks, colonial securities, American securities, foreign railways; telegraphic, insurance, steamship, and miscellaneous shares; Cornish and Welsh mines, foreign gold mines, &c.

With remarks on the daily operations, and advice as to purchases or sales.
Annual subscription, £1 1s.; by post, £2 2s.; monthly subscription by post, 4s.; single copy, 1d.; by post, 2d.
Published by P. WATSON, Stock and Sharedealer, 79, Old Broad-street, London, E.C.

CORNISH AND FOREIGN MINES—
TO SHAREHOLDERS AND OTHERS.

PETER WATSON'S "WEEKLY MINING CIRCULAR AND SHARE LIST—SYNOPSIS OF CORNISH AND DEVON MINES," of Friday, Nov. 5, No. 557, V. 1. XL., price 6d. each copy, forwarded on application, contains information on the following mines:—

Bwch Consols.	East Wheal Lovell.	Prince of Wales.
Bronfloyd.	West Great Rock.	East Caradon.
Great Rock.	East Wheal Seton.	Great Wheal Vor.
Van.	West Seton.	Wheal Margaret.
West Caradon.	Wheal Trolawny.	South Great Work.
North Croft.	Wheal Seton.	

With Statistical Information on the Tin Trade, &c.

INVESTMENT OR SPECULATION.—A SELECTED LIST OF
RAILWAYS, BANKS, MINES, COLONIAL SECURITIES, FOREIGN GOVERNMENT BONDS, &c., forwarded to bona fide investors on application, in addition to the high rate of interest many of the above are paying, there is now every probability of a great rise in market value.

PETER WATSON, STOCK AND SHAREDEALER,
79, OLD BROAD STREET, LONDON
(three doors only from Hereford's passage, entrance to the Stock Exchange).
Twenty-four years' experience.
(Two in Cornwall and Twenty-two in London.)

Bankers: The Alliance Bank, and the Union Bank of London.
References given and required (when necessary) in all the principal towns of the United Kingdom.

M^r. EDWARD COOKE,
STOCK AND MINING SHAREDEALER, 76, OLD BROAD STREET
(and Mining Exchange), LONDON, E.C.

E. C. deals in Australian United Gold mining shares, both fully paid and the ordinary shares.
SPEAR MOOR shares, at current price, are an eligible investment.
Bankers: Alliance Bank.

M^r. W. H. COUEL,
No. 42, CORNHILL, LONDON, E.C.

Closing prices, Friday evening:—
East Caradon £ 6½ to £ 6¾
East Lovell 15 „ 16
East Seton 2 „ 2¼
West Chiverton 56 „ 57
Chiverton Moor £ 3½ to £ 3¾
North Treskerby 10s. „ 12s.
Tincroft 18 „ 19
Cook's Kitchen 13½ „ 13

BONA FIDE MINING INVESTMENTS.

MATTHEW GREENE, STOCK AND SHAREDEALER,
14, PINNER'S HALL, OLD BROAD STREET, LONDON, E.C., gives good advice on mines, and can recommend shares now well worth buying. Full particulars on application.
Bankers: Bank of England.

M^r. C. A. POWELL, BRITISH AND FOREIGN STOCK AND SHAREDEALER,
No. 1, PINNER'S COURT, OLD BROAD STREET, LONDON, E.C.

BUYER or SELLER of every description of negotiable securities at current market prices net.
Special facilities for transacting business in the shares of mines more prominently before the public.
Anyone wishing to know what to do in CALDBECK FELS shares can be advised by me.
Bankers: City Bank, Finch-lane.

BARTLETT AND CHAPMAN'S "INVESTMENT CIRCULAR AND FINANCIAL RECORD" for AUGUST comprises—
A Comprehensive Review of the Money, Stock, and Share Markets for the month; a Selection of the Best Investments, yielding Dividends of from 9 to 20 per cent.; a Statement of the Dividends paid in all Joint-stock and Cost-book Companies; and a notation of all the events of the month that are interesting to Investors or intending Investors.
BARTLETT and CHAPMAN recommend the purchase of the Lovells, Great South Chiverton, Llanarmon, North Jane, Tin Valley, West Chiverton, Wheal Jane, and Lovell Consols shares. Full particulars forwarded on application, 36, Cornhill, E.C.

LLANARMON LEAD MINING COMPANY (LIMITED).—
Messrs. BARTLETT and CHAPMAN invite attention to the shares in this company, which has been formed to work the east continuation of the Old Nant lode, in Denbighshire, which returned profits exceeding £1,000,000, and the large horizontal deposit of lead or "flats," which has given enormous profits to four or five mines in the vicinity of Llanarmon, and which in that mine will be reached in 10 or 12 fms. further sinking.
The capital is divided into 10,000 shares of £2 each, fully paid up, so that no further liability will be incurred beyond the nominal value of the shares.
Samples of the ore (which are very rich), as also plans, can be seen at the office, 36, Cornhill, E.C., where prospectuses and forms of application may be obtained.

WALTER TREGILLAS, 122, BISHOPSGATE STREET
WITHIN, LONDON, E.C., DEALS in all descriptions of ENGLISH and FOREIGN SECURITIES, either for immediate cash or the fortnightly settlement.
W. T. is always prepared to do business in the shares of the Brazilian Gold Mines, which, from long experience, he is well acquainted with.
Taquaril shares are a first-class investment.

M^r. J. H. COCK, STOCK AND MINING SHAREDEALER,
74, OLD BROAD STREET, LONDON, E.C.
Fifteen years' experience in Cornwall and London.
Business transacted in all the leading mines, and those difficult of purchase or sale negotiated.
SPECIAL BUSINESS in New Lovell, Ding Dong, Botallack, Hammett, North Treskerby, Levant, and St. Ives Consols.

Established Twenty-five Years.

M^r. HUBERT BARNES RYE, STOCK AND SHAREDEALER,
77 and 78, OLD BROAD STREET, CITY, E.C.
(Close to the Stock Exchange.)

Those parties who sold "East Lovell" and "East Seton" on my advice last week can now re-purchase at much lower prices. Mr. RYE will be glad to receive instructions from any wishing to do so. A reaction is likely to occur in both these mines before long.

Mr. RYE is in a position to pay CASH for any shares he is favoured with an order to sell "without extra charge."
Mr. H. B. RYE transacts business in every description of Stock Exchange securities at the close market price of the day.
Nov. 5, 1869. Bankers: Roberts and Co.

INVESTMENT, LOAN, AND BANK AGENCY.
Established 1839.

Foreign Stocks, Colonial Government Bonds, Railway, Bank, Telegraph, Mining, and other Shares.
Facilities afforded to Investors upon advantageous terms.
Full market prices given, free of commission, to parties desiring to realise.
LOANS granted for one year, or any shorter period, on Stocks and Shares having a market value.

DEPOSITS of all amounts received at 5 per cent. interest per annum.
Bank and Finance Agency Business generally undertaken.
RICHARD TAYLOR AND COMPANY,
12, Clement's-lane, Lombard-street, London, E.C.

M^r. CHARLES THOMAS,
MINING AGENT, GENERAL SHAREDEALER, AND AUCTIONEER,
3, GREAT ST. HELEN'S, LONDON, E.C.

M^r. W. H. LANNYON,
(Late of Kennall Gunpowder Company)
GUNPOWDER MERCHANT,
TRURO.

M^r. T. E. W. THOMAS, STOCK AND SHAREDEALER,
LONDON, E.C.
Business operations in Mining Shares effected at close market rates.
Reliable information afforded upon most of the Welsh lead mines.
Daily Price Lists to applicants.

M^r. E. J. BARTLETT, STOCK AND SHAREDEALER,
No. 30, GREAT ST. HELEN'S, LONDON, E.C.

Specially recommends Holders, Speculators, and Investors to peruse his pamphlet, entitled "How to Invest, &c.," post free for seven stamps, before purchasing or selling the following Shares:—
East Lovell. Hammett. South Merilyn.
East Darren. New Lovell. South Darren.
Frank Mills. North Levant. Spear Moor.
Great South Chiverton. North Pool. West Godolphin.
Great Rock. Nanteos.
E. J. B. is prepared to send his Daily Price List upon application, and specially directs attention to Nanteos, South Merilyn, and North Pool shares at present low prices.

LEAD MINES AS AN INVESTMENT.
Now ready, by J. H. MURCHISON, Esq., F.R.G.S.,
THE THIRD EDITION OF

THE "LEAD MINES OF CARDIGANSHIRE AND MONTGOMERYSHIRE,"—detailed comprising VAN, DYLIFFE, LISBURN, EAST DARREN, SOUTH DARREN, CEFN BRWYN, and other important Mines. With a MAP, showing the position of the different Mines, arranged and drawn specially for this Pamphlet.
This edition is revised, with additional remarks, and more mines represented on map. Price 1s.
8, Austinfriars, London, E.C.

Second edition, price 6d.,
SELF HELP TO PATENT LAW;
Also, price 1s.,
COLONIAL AND FOREIGN PATENT LAWS.
By GEORGE DAVIES, C.E.
Published at the Office for Patents, 4, St. Ann's-square, Manchester, by GEORGE DAVIES, C.E. (late John Davies and Son).
Established 1835.

M^r. J. B. REYNOLDS, 70, BISHOPSGATE STREET
WITHIN, LONDON.

M^r. HENRY MANSELL, STOCK AND SHAREDEALER,
1, PINNER'S COURT, OLD BROAD STREET, LONDON.
Bankers: London Joint-Stock Bank.

MESSRS. J. HUME AND CO., 74, OLD BROAD STREET,
LONDON, E.C., have BUSINESS in:—
10 Van, £38¼. 20 East Lovell, £16¼. 20 New Lovell, 38s.
50 Van Consols, £17½. 10 East Caradon, £6. 100 Wheal Crebor, 10s. 6d.
50 Caldbeck Fells, 31s. 50 East Seton, £2¼. 50 North Treskerby, 12s.
50 West Maria, 28s. 2 Seton, £36½. 50 Don Pedro, £3½ pm.
50 Prince of Wales, 24s. 100 Frontino, 21s. 100 Taquaril, 3s. 3d. pm.
20 South Condurow. 50 Australian United. 50 East Chiverton.

LLANARMON LEAD MINING COMPANY.—Prospectuses and full particulars on application to Messrs. J. Hume and Co.
J. Hume and Co.'s "Investment Record" for November is now ready; price 6d.; subscription, 5s. per annum. It should be obtained by all capitalists and speculators before purchasing.
Bankers: The London Joint-Stock Bank.

M^r. EDWARD BREWIS, STOCK AND SHAREDEALER,
No. 34, OLD BROAD STREET, LONDON, E.C.

Business transacted for prompt cash, or if preferred for account in every description of tin, lead, copper, gold, and silver mining shares.
Money advanced on mining shares for account, or a longer period if desired.
BUDNICK CONSOLS.—These shares are still upwards, and are safe for a great rise; the reports are highly favourable. The mine is divided into only 1000 shares. BUYER or SELLER of any number for cash.
Bankers: The Alliance Bank, London, E.C.

ENDEAN, HOOKE, AND CO., STOCK AND SHARE DEALERS,
85, GRACECHURCH STREET, LONDON.

Every class of marketable stock dealt in for cash or account. SPECIAL BUSINESS in Aberdaunt, Van, and other Welsh mines.
Investors are recommended to act cautiously, and to consult Messrs. ENDEAN, HOOKE, and Co. Consultation fee, £1 1s.

WANTED TO PURCHASE—300 shares in the Aberdaunt Lead Mine.

RICH OLD TREBURGETT SILVER AND LEAD MINE.—
MESSRS. TILLY and THOMAS, 1, CIRCUS PLACE, LONDON WALL, E.C., invite the ATTENTION of INVESTORS to the SHARES now being issued in this celebrated mine.

In addition to the rich lead ore, which has lately been sold at £24 a ton, there exists in the capels of the lode a large amount of true silver ore, which in its undressed state is worth £28 per ton.
Samples of the ore can be seen and prospectuses obtained at the above offices.

CAPITALISTS SEEKING SAFE AND PROFITABLE INVESTMENTS, free from risk, should act only upon the soundest advice. The undersigned having had upwards of 20 years experience in the different share markets offers his services. Mines judiciously selected afford a wider range for profit than any other class of securities. Instances frequently occur of 1000 per cent. and upwards being returned on the original outlay. Read "Britain's Metal Mines" a complete guide, price 1s., free per post 13 stamps.
JOHN R. PIKE,
3, Crown Chambers, Threadneedle-street, London.

MESSRS. LISCOMBE AND CO.,
12, CHAPEL WALKS, SOUTH CASTLE STREET, LIVERPOOL,

MINING SHARE BROKERS.
Have the BEST and LATEST INFORMATION on all the LEAD MINES of WALES and the NORTH OF ENGLAND, and on all AMERICAN MINES, and are in a position to transact business in most of them at closest market prices.
Messrs. LISCOMBE and Co. issue monthly the "Liverpool Mining Circular," containing special information on all the leading Welsh Mines, which can be had on application.

M^r. C. CARKEE, CAMBORNE,
CORNWALL.

Having had Ten Years experience in the Mines, and Twelve Years on the Mining Market, is in a POSITION to GIVE ADVICE what to BUY and what to AVOID; also to transact business in any of the mines in the country.
Mines inspected and reported on.

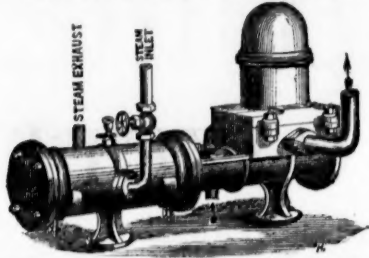
M^r. THOMAS THOMAS,
ASSAYER, &c.,
COPPER ORE WHARVES, SWANSEA

M^r. HENRY SEWELL, MINING ENGINEER, is at present on a TOUR through the LEAD MINING DISTRICTS OF WALES. Any persons desirous of having REPORTS on the following districts—the VAN, TAN-YR-ALLT, MOLD, HOLYWELL, CARMARTHEN, and ABERYSTWTH, can address him, Post Office, Llanidloes.

M^r. J. G. WILLIAMS,
LAND VALUER, ESTATE AGENT, AND MINE BROKER,
GLOUCESTER HALL, NEAR ABERYSTWTH.

MESSRS. A. STUART AND CO., 93, BISHOPSGATE
STREET WITHIN, LONDON, E.C., have BUSINESS, for cash or account, in the following mines:—20 Chontales, 15s.; 50 Frontino, 22s. 6d. ex call; 25 Prince of Wales, 23s. 3d.; 5 Chiverton; 25 Australian United (offer wanted); 20 Mining Association, 16s. 9d.; 15 Don Pedro, £4¼ net.

**PATENT UNIVERSAL STEAM PUMPS,
VERTICAL AND HORIZONTAL.**



**POWERFUL—SIMPLE—DURABLE—RELIABLE—CHEAP.
SUPERIOR TO ALL OTHER INVENTIONS.**

SOLE MAKERS—
HAYWARD TYLER AND CO.,
84 AND 85, UPPER WHITECROSS STREET, LONDON, E.C.
* * WHERE IT CAN BE SEEN AT WORK.

GAMBLE'S PATENT STEAM LUBRICATOR.
FOR STATIONARY, LOCOMOTIVE, AND STEAM ENGINES.

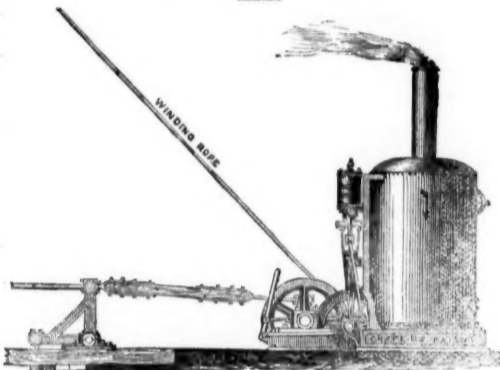


SELF-ACTING

Lubricates all the valves and internal parts of the cylinder continuously. Effects a most important saving in the oil or tallow. Increases the regularity of working. Prevents frequent repairs.

SOLE MAKERS—
HAYWARD TYLER AND CO.,
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LONDON, E.C.

Prize Medal—International Exhibition, 1863.



**CHAPLIN'S PATENT
PORTABLE STEAM ENGINES,
FOR PUMPING AND WINDING.**
SPECIALLY ADAPTED FOR PITS, QUARRIES, &c.
SIMPLE AND STRONG; require NO FOUNDATION OR CHIMNEY STALK, and are
EASILY ERECTED OR REMOVED.

Sizes, from 2 to 30-horse power.
Stationary Engines, 1 to 30-horse power, with or without gearing.
Steam Cranes, 30 cwt. to 20 tons, for wharf or pit.
Hoisting Engines, 2 to 30-horse power, with or without fly.
Contractors' Locomotives, 6 to 27-horse power.
Traction Engines, 6 to 27-horse power.
Ships' Engines, for winding, cooking, and distilling, passed by H.M. Government for half water.
Steam Winches. Engines and Boilers for light screw and paddle steamers.

WIMSHURST & Co. Engineers,
LONDON STREET, COMMERCIAL ROAD,
LONDON, E.
(At Stepney Station of Blackwall Railway.)



**PRIZE MEDAL
AWARDED
AT THE
HAVRE
EXHIBITION
Of 1868**



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No. 3 COMPOSITION PAINT.**
Is superior to all other paints, and, being mixed ready for use, is cheaper. It also lasts longer, will wash without rubbing off, and can be applied by gardeners or labourers, requiring no oil, turpentine, or varnish. It is applicable for all kinds of house painting, greenhouses, vinerias, pit frames, &c.; also for carts, wagons, railway plant, agricultural implements, and MINING purposes, &c., after a successful trial of nearly TWENTY YEARS.
It dries in a few hours with a beautiful brilliant surface, without stickiness or unpleasant smell; and is more economical, and stands longer than unground ordinary paint, mixed by hand. It has been opened after ten years, and found to be quite good and ready for use.
As any person can lay it on, it is found to be most economical and useful to country gentlemen, and to the settler in India, Canada, Australia, New Zealand, &c., when living at a distance from a town—enabling every man to be his own painter. Danger from fire on board ship is also prevented. (See pamphlet, with testimonials, sent free on application.)
PEACOCK AND BUCHAN'S ANTI-CORROSION METALLIC PAINT for MINING PLANT, at 20s. per cwt., is extensively used by the great mining companies, being cheap and durable.

For prices, &c., apply to
MESSRS. PEACOCK AND BUCHAN, SOUTHAMPTON;
MR. ROBERT ORD, JUN., MANAGER, 29, UPPER EAST SMITHFIELD, LONDON;
Or their accredited agents in all parts of the world.
AGENTS WANTED FOR INLAND TOWNS.

**COMPENSATION IN CASE OF INJURY,
AND A FIXED SUM IN CASE OF DEATH,
CAUSED BY ACCIDENT OF ANY KIND.**
May be secured by a policy in the
RAILWAY PASSENGERS' ASSURANCE COMPANY.
An annual payment of £3 to £5 ss. insures £100 at death, and an allowance at the rate of 2s. 6d. per week for injury.
RAILWAY ACCIDENTS ALONE
May be provided against by insurance tickets for single or double journeys.
For particulars, apply to the Clerks at the Railway Stations, to the Local Agents, or at the
OFFICES,—64, CORNHILL, and 10, REGENT STREET, LONDON.
WILLIAM J. VIAN, Sec.

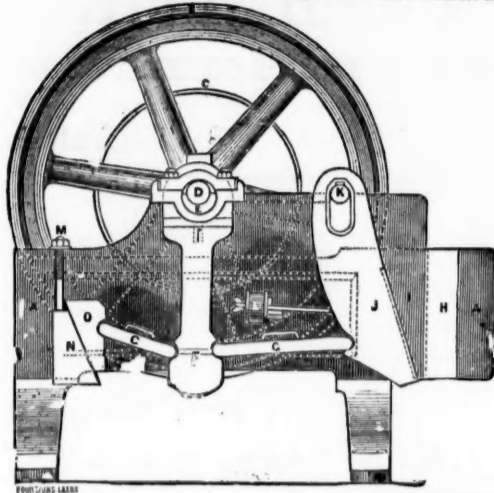
IMMENSE SAVING OF LABOUR.
TO MINERS, IRONMASTERS, MANUFACTURING CHEMISTS, RAILWAY COMPANIES, EMERY AND FLINT GRINDERS, MCADAM ROAD MAKERS, &c., &c.

BLAKE'S PATENT STONE BREAKER,

OR ORE CRUSHING MACHINE.

FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England. Read extracts of testimonials:—



The Parys Mines Company, Parys Mines, near Bangor, June 6.—We have had one of your stone breakers in use during the last twelve months, and Captain Morcom reports most favourably as to its capabilities of crushing the materials to the required size, and its great economy in doing away with manual labour.
For the Parys Mining Company, JAMES WILLIAMS.

H. R. Marsden, Esq.

Edon Emery Works, Manchester.—We have used Blake's patent stone breaker made by you, for the last 12 months, crushing emery, &c., and it has given every satisfaction. Some time after starting the machine a piece of the moveable jaw about 20 lbs. weight, chilled cast-iron, broke off, and was crushed in the jaws of the machine to the size fixed for crushing the emery.
H. R. Marsden, Esq. THOS. GOLDSWORTHY & SONS.

Alkali Works, near Wednesbury.—I at first thought the outlay too much for so simple an article, but now think it money well spent.
WILLIAM HUNT.

Welsh Gold Mining Company, Dolgelly.—The stone breaker does its work admirably, crushing the hardest stones and quartz.
WM. DANIEL.

Our 15 by 7 in. machine has broken 4 tons of hard whinstone in 20 minutes, for fine road metal, free from dust.
Messrs. ORD and MADDISON,
Stone and Lime Merchants, Darlington.

Kirkless Hall, near Wigan.—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton.
JOHN LANCASTER.

Ovoca, Ireland.—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour.
WM. G. ROBERTS.

General Frémont's Mines, California.—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or \$75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate.
SILAS WILLIAMS.

For circulars and testimonials, apply to—

H. R. MARSDEN, SOHO FOUNDRY,

MEADOW LANE, LEEDS,
ONLY MAKER IN THE UNITED KINGDOM.

CAUTION!
BLAKE'S PATENT STONE BREAKER.

In Chancery.

BLAKE v. ARCHER, NOVEMBER 12, 1867.

His Honour the Vice-Chancellor Wood having found a VERDICT in FAVOUR of the PLAINTIFFS in the above Cause, establishing the VALIDITY of BLAKE'S PATENT, and made a DECREE for an INJUNCTION to RESTRAIN the DEFENDANTS, Messrs. THOMAS ARCHER and SON, of Dunston Engine-Works, near Gateshead-on-Tyne, from INFRINGING such PATENT, and ordering them to pay to the Plaintiffs the costs of the Suit.

ALL PERSONS are hereby CAUTIONED against MANUFACTURING, SELLING, or USING any STONE BREAKERS similar to BLAKE'S, which have not been manufactured by the Plaintiffs. Application will forthwith be made to the Court of Chancery for INJUNCTIONS AGAINST ALL PERSONS who may be found INFRINGING BLAKE'S PATENT after this notice.

SOLE MAKER IN ENGLAND.

H. R. MARSDEN, SOHO FOUNDRY, MEADOW LANE, LEEDS.

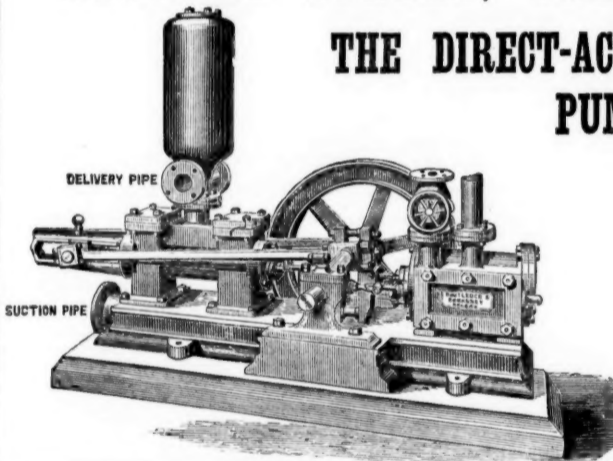
ROUTLEDGE AND OMMANNEY,

ENGINEERS,

ADELPHI STREET, SALFORD, MANCHESTER,

THE MAKERS OF

**THE DIRECT-ACTING DOUBLE HORIZONTAL
PUMPING ENGINE.**



THESE PUMPING-ENGINES are especially adapted for FORCING WATER OUT OF MINES, being simple in construction and reliable. They have now been at work many years in collieries, &c., and given every satisfaction.

**PUMPS AND
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Especially designed for colliery purposes; also, AIR-COMPRESSING ENGINES, as used in connection with COAL-CUTTING MACHINES, &c.

Further information and prices forwarded on application.

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WEIGHING PLANT,

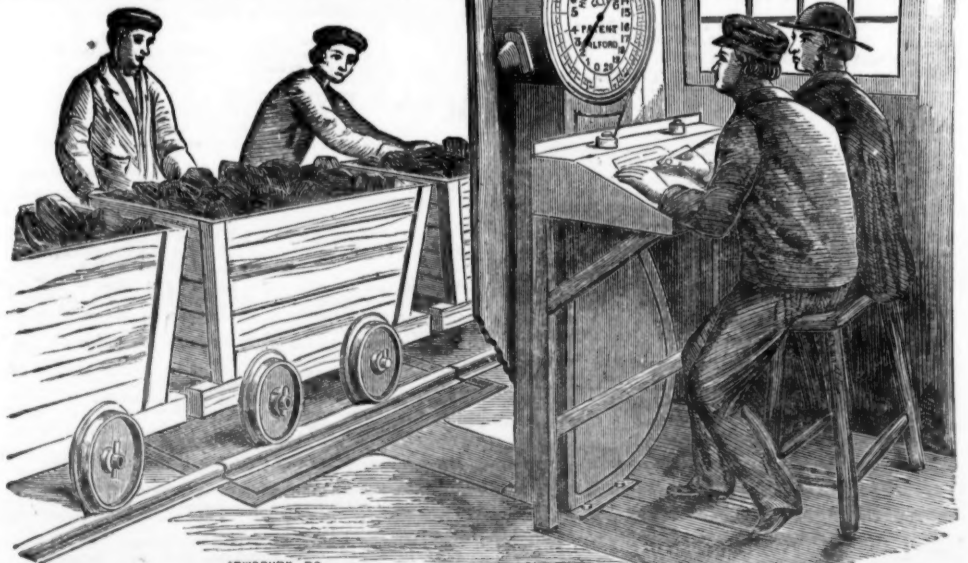
To the standard of any nation,
Suitable for every purpose, of any power and dimensions.

Hodgson & Stead, Makers,

Contractors to Railways, Carriers, and others, for Maintaining Weighing Machinery.

Works: IRWELL STREET.

Show Rooms: New Bailey-street, Salford, Manchester.



PATENT SELF-INDICATING WEIGHING MACHINE,
Capable of WEIGHING TWELVE TUBS A MINUTE.

The Old Treburgett Silver and Lead

MINING COMPANY (LIMITED),

CAPITAL £30,000 IN 30,000 SHARES OF £1 EACH.

First issue, 20,000, of which 10,000 fully paid up will be issued to the vendor; 5s. per share payable on application, 5s. on allotment, and the balance as required, or the full amount may at once be paid up.

DIRECTORS.

W. G. CRAIG, Esq., Clydesdale House, Highbury New Park, N.
D. EATON, Esq., 13A, Great Marlborough-street, London, W.
T. A. MASEY, Esq., 6, Crown Office Row, Temple, E.C.

With power to add to their number from the general body of shareholders.

BANKERS—THE CITY BANK, 5, Threadneedle-street, London, E.C.

CONSULTING MINING ENGINEER—DAVID FORBES, Esq., F.R.S., A.I.C.E., &c., 11, York-place, W.

SECRETARY—J. H. TILLY, Esq., 1, Circus-place, London Wall, London, E.C.

This valuable mine, situate in the parish of St. Teath, Cornwall, was worked some thirty years ago, with great success, solely as a lead mine upon one lode only, and merely to the depth of 60 fathoms. The existence of true silver ore was not then recognised, as it did not occur along with the lead ore, but in the quartz side walls. It is now proposed to erect an engine of sufficient power to enable the mine to be extended and worked in depth, and also to take down the capels containing the silver ore left standing in the old workings.

A specimen of the pure silver ore, picked up by Mr. David Forbes at the mine, gave 9·96 per cent., or 3253 ozs. 12 dwts. of fine silver to the ton, and a specimen of the lead ore as much as 69 ozs. 5 dwts. of silver to the ton.

A ton of the silver ore, reduced by Messrs. Betts and Son, Birmingham, contained silver to the value of £28 per ton, and a parcel of the lead ore from the adit, without being crushed or dressed, forwarded to Messrs. Bath and Son, Swansea, realised at the rate of £24 a ton.

The directors have personally visited the mines, accompanied by Mr. David Forbes, F.R.S., and believe that the company possesses more than ordinary prospects of success; from the combined favourable features of the mine—the probable smallness of the working capital required—the short time necessary to bring the mine into actual operation—the immediate return of silver ore in the capels standing in the levels—and the high market value of the ores.

The directors invite special attention to the reports from Mr. DAVID FORBES, Mr. JEHU HITCHINS, Captain S. BENNETT, and Captain PHILP.

Prospectuses, reports, specimens of ore, and Articles of Association, can be seen at the offices of the company, as well as an agreement, dated the 25th August, 1869, made between John Henry Tilly, as trustee for the company, and Thomas Adair Masey.

The Virtuous Lady Mining Company

(LIMITED).

INCORPORATED UNDER THE COMPANIES ACTS, 1862 AND 1867.

CAPITAL £15,000, IN 15,000 £1 FULLY PAID-UP SHARES.

N.B.—The whole of the shares are taken up. The present quotation is £2 per share, and a limited number only will be disposed of at that price, as they are rapidly advancing in value.

The directors were chosen at the First General Meeting of Shareholders, which took place on Wednesday, September 1 1869, at the Bedford Hotel, Tavistock.

BANKERS—THE WEST OF ENGLAND AND SOUTH WALES DISTRICT BANK.

SOLICITOR—MR. EDWARD CHILCOTT, Tavistock.

SECRETARY—MR. THOS. J. BARNARD, 5, Abbey Mead, Tavistock.

The Virtuous Lady Mine is situated about 3 miles south-west of the town of Tavistock.

The sett, which is very extensive, and comprises the most highly mineralised ground in the two counties of Devon and Cornwall, is held upon lease for 21 years from Sir Massey Lopes, Baronet, dated July, 1869, upon a royalty or dues of 1-18th.

Almost unlimited water-power is available, as the rivers Walkham and Tavy pass through the sett.

Historical records set forth that this mine was worked by the ancients for silver, and that the caverns which were formed by mining industry were in later years inhabited by banditti. It is generally known that well advanced in the present century the mine has returned tens of thousands of tons of rich copper ore. It is, however, quite apparent that in the past the intrinsic value of the property was unknown, and, therefore, never duly appreciated, or it would have been more developed, and the treasures already discovered not left for the present proprietors. It was for years recognised as the mine of mines from its immense returns of rich copper ore, nevertheless the deepest workings are only about 17 fathoms from surface, which will readily show that really practically the mine has hardly been explored at all. The courses of ore so far worked upon are not what are called regularly defined; they are what are termed "flats"; they have, however, perfect walls, and when descending into the earth have a beautiful underlie; but suddenly the descent ceases, and the courses of ore run away in a "flat" direction for some considerable distance, when they again take a descent, with a fair underlie. It is from these "flats" that tens of thousands of tons of copper have been extracted, and the horizontal courses alone will unquestionably yield great quantities of ore, as they, comparatively speaking, have thus far been only slightly worked; the "flats" are, however, merely out-throws, yea, threads only of and from the gigantic quartz lodes which are 100 to 200 feet wide. By a winze or sink that has been put down some 5 fms. in one of the levels the ground below is found producing good and large stones of rich ore, and the evidence appears clear that these immense quartz lodes will when followed to the deep make most extensive lasting deposits of copper ore.

The extensive and remarkable crystallisation and decomposition throughout these great quartz lodes is a further striking evidence of the chemical action caused by affinity, change, or formation of existing very large metallic mineral bodies below, and further, the great cauter lode to the south (upon which operations as shoddings only have been done as yet), and dipping to the north, will at about 40 fathoms from surface form a junction with the great north lodes, when almost unheard of masses of copper may be expected to be discovered.

The mine is in full operation, a water wheel and crushing machine and all the necessary machinery being in the active course of erection, and temporary dressing floors are laid out in order to dress the ore upon a small scale, until the machinery is put in motion, when more extensive workings generally can be carried on. The machinery will be started by the end of September, when the old work-

ings will be drained, and the shaft commenced to be sunk 15 fathoms deeper and cross-cuts driven to intersect and cut the lodes at that depth, which can hardly fail to yield immense deposits of copper ore; but apart from any new explorations and anticipated great discoveries in entirely new ground, constant enquiries are being made by "tributers" for "pitches" in the old workings as soon as the mine is drained. To the uninitiated in practical mining it may be observed that "tributers" will take the only little bit of speculation there may be in the mine, as they receive nothing save a certain share (and this for a limited time only), of the sale of the ores they search for and discover.

We will now draw attention to the assays made by Dr. Philson (—No. 1 sample, yellow and black ore, clean in hard substance, 20 per cent. copper, 19½ ozs. of silver to the ton; No. 2, peach, prlan, yellow and black ore intermixed, 14½ per cent. copper, 16 ozs. of silver to the ton; No. 3, prlan, with a little black ore, 6½ per cent. copper, and 10 ozs. of silver to the ton.

An elaborate and most careful general mineral analysis by Dr. Philson, of the mineralised prlan and other matters of the lode now being worked upon, gives a result of the existence of copper, silver, lead, tin, antimony, cobalt, nickel, iron, zinc, and sulphur—strong traces of the whole—but the chief and only paying quantity being copper, the silver contained in it enhancing its value.

Mr. J. Harvey, Assayer, of Tavistock, has made several copper assays, the products of different specimens ranging from 6 to 25 per cent. A killas and peach have also been submitted to Dr. Philson, and Mr. W. Richards, gold and silver assayer, of London, to be tested for gold, by analysis and assay, and out of very small samples, both gentlemen found strong traces of gold. It is not at all unlikely the rich deposits of quartz in the old workings may contain both gold and silver, not visible to the eye, but rich enough to yield a profit upon pulverisation and proper treatment. Reference may be drawn to the fact that this mine has received large sums of money for its quartz specimens, as simply ornamental works of nature, it having been the rule to search every man coming from underground.

Ample capital is provided to put up most extensive and all necessary machinery, and thoroughly explore the mine, and at the same time the parts of the lode above water level now being worked upon, which are productive in rich ore, and daily growing more valuable, will at once, and more especially when the machinery is in motion, so that the crusher can be used, furnish profits which can only result in handsome dividends at an early date.

Knowing that reports by mining agents embodied in a prospectus are more or less ignored, none accompany this circular. The mine is in full operation, and can be visited and inspected by any intending investor, mining inspector, or visitor upon their own account, upon application to the secretary for a visiting card.

The company is formed, the shares are all taken up, and the mine stands upon its own merits, open for the world to criticise.

Shares can be purchased of the Secretary, Mr. THOS. J. BARNARD, 5, Abbey Mead, Tavistock, who is prepared to transfer a limited number at £2 per share.

N.B.—The machinery was started last Saturday, the 16th inst., with the greatest success.

Meetings of Mining Companies.

UNITED MEXICAN MINING COMPANY.

The ordinary general meeting of shareholders was held at the offices, Great Winchester-street, on Wednesday,

Mr. CHARLES MORRIS in the chair.

Mr. W. M. BROWNE (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed.

The report of the directors stated that the expenditure and returns in Mexico for the half-year ending June 30 showed a profit of \$2028 on the old undertaking, and that the sum of \$16,632 has been expended on the new concern. On Sept. 19, the date of the latest advices received from Mexico, Mr. Furber's available funds amounted to \$13,264. The present balance at the credit of the first call is \$3971. 12s. 6d. Mr. Furber, however, has not been drawing to the extent of his expenditure on this account, but using the available funds in Mexico in lieu thereof. The directors have not considered it necessary at this meeting to recommend a call, but should such a contingency arise they will convene a special meeting for that purpose.

The CHAIRMAN said that it was his duty to move that the report and accounts be received and adopted. He did not know there was any particular feature that called for remark, nor would there be any till the great work in hand had been further advanced. In the meantime, all the indications were exceedingly favourable, and everyone familiar with the property held the most confident anticipations of the ultimate success of the undertaking. One agreeable feature, no doubt, would be the fact that the directors had avoided making calls, which by this time would have amounted to 7s. 6d., whereas only 2s. 6d. per share had really been called up; but, probably, in the early part of the ensuing year a call would be necessary, on account of the necessity of a greater expenditure being incurred than had hitherto been the case, for as the works were extended the outlay must proportionately augment. It was his opinion that, as a speculation, the present was the most encouraging that they had ever been engaged upon; but as the reports were regularly published, the shareholders had the same means of forming an opinion as to the probabilities of success. He moved that the report and balance-sheet be received and adopted.

Mr. HEATH seconded the proposition. The CHAIRMAN said he had intended to draw attention to the fact that Mr. Furber had written to the board acknowledging the vote of thanks passed to him at the last meeting. Mr. Furber tendered his thanks to the body of shareholders, and assured them that, as hitherto, he would continue to do his duty, and to do his utmost to promote the company's interest. He (the Chairman) added that the company were much indebted to Mr. Furber, and it was his hope, as it was, no doubt, also that of every member of the company, that Mr. Furber would long continue their manager. (Hear, hear.)

Mr. ROMNEY asked what would be the probable amount of the next call? The CHAIRMAN said it might be necessary to make a call of 2s. 6d. per share early in the ensuing year.

Mr. ROMNEY had hoped that by this time some discoveries would have been made, preventing the necessity of further calls. It should be remembered that the smaller the capital account the better it was for the interest of the bona fide shareholders, as every 2s. 6d. called up deteriorated the market value. The directors could always calculate upon the shareholders coming forward to meet any requirements; in fact, it was the interest of the shareholders to do so. If one mine paid well the profits go towards the development of the others, but by all means keep the capital down. During the 15 years he had been connected with the company he had never sold a share, although he was bound to confess that he possessed more confidence in the directors than in the concern. He could not be called, therefore, a shuttlecock shareholder.

Mr. ADAM (a director) said no report had ever been issued by the directors to lead any shareholder to suppose any discovery was likely to be made until a certain point had been reached, and the shareholders were also made perfectly aware that a certain amount of capital would probably be required to be expended upon the new concern, which had nothing whatever to do with the old mines. At the time the question was discussed the shareholders were distinctly informed that they would probably be called upon to pay 5s. per share per annum, but although 18 months had now elapsed not more than 2s. 6d. per share had been called. As to the funds in Mexico, the fact was that Mr. Furber had not drawn to the extent authorised, but had used the available funds there. There was every reason to believe that if they supported Mr. Furber it would be the means of raising the company to a greater state of prosperity than it had ever yet attained. Mr. Furber was conducting the operations in a most economical manner, and was making use of the funds in Mexico instead of calling upon the shareholders. (Hear, hear.)

Mr. WILLIAMSON (a director) said the board were desirous of postponing the call as long as they possibly could, and although the Chairman had said that a call would certainly not be made till January, it did not follow it would then be required. But under ordinary circumstances it must, of course, be expected.

Mr. ROMNEY wished it to be distinctly understood that he was not complaining of the manner in which the board were conducting the operations. All he wished to urge was, that if they had capital in Mexico let it be used to meet the expenses, without minding whether there was a profit upon the old and a loss upon the new concern. It was one general fund.

A SHAREHOLDER thought it was much better to make a call than to capitalise the revenue.

The CHAIRMAN said that when they undertook the development of these new mines the directors thought it desirable to keep the concerns separate, although in point of fact both old and new were one enterprise.

Mr. ROMNEY said it was really the old concern speculating. Each mine kept its own accounts, but so far as the company was concerned the expenses came out of the general fund.

Mr. ADAM said the shareholders had declared that they were ready to pay a call whenever it was made, and the directors would not make one unless it was absolutely necessary.

The motion adopting the report and balance-sheet was put, and carried unanimously. Upon the proposition of Mr. ROMNEY, seconded by Mr. HEATH, a cordial vote of thanks was passed to the Chairman and directors.

The CHAIRMAN, in acknowledging the vote, stated that the directors believed that when the junction of the lodes was reached this new venture would prove to be a profitable concern—probably one of the most profitable in Mexico, at least such was his opinion. The meeting then separated.

NEW QUEBRADA COMPANY.

The ordinary general meeting of shareholders was held at the City Terminus Hotel, Cannon-street, on Oct. 29.

Mr. JAMES WRIGHT, C.E. (the secretary), read the notice convening the meeting. The report of the directors was taken as read.

The CHAIRMAN said he thought the best mode to proceed would be for him to take each of the clauses in the report, and to make such remarks upon them as he might deem necessary, in order that shareholders should properly understand the present position and future prospects of the company. The first clause merely states that the directors submit a balance-sheet and statement of accounts—the board trusted the balance-sheet had been made out with such clearness that it spoke for itself, but if there be any item requiring elucidation, the information would, of course, be willingly afforded. Passing to the next clause, alluding to the postponing of the last half-yearly meeting, he might mention that the directors took upon themselves to adopt that course solely in the interests of the company. It did not appear to them expedient—and it certainly would have involved some expense—to call a general meeting in order to inform shareholders of the position of the three main questions; and, therefore, they trusted they would be indemnified for this deviation from the usual course of proceedings. Those three things at that time were still undecided—that is, the arbitration in connection with the late contractors, the execution of the conveyance of the estate, and the arrival and disposal of the anticipated cargo of timber. Of these three questions, he need hardly say, the execution of the conveyance of the estate was by far the most important, and led chiefly to the postponement of the half-yearly meeting. The arbitration with the late contractors required very little remark. The board had done their best, so far as seemed judicious, to bring it to a legal close; they found an impediment on the other side to act. The directors did not think it would be a judicious step to drag the company into a court of law, in order to have claims made against it, and the more especially that when those claims are made it would be their duty to prove they were not valid, which could be done with the utmost certainty. He was of opinion they would hear no more of that arbitration—an opinion founded upon a careful examination of the whole of the circumstances. (Hear, hear.) At the last meeting the directors took upon themselves to state that they expected the conveyance would be executed in about a month; but when legal proceedings were in question, and particularly legal proceedings in the Court of Chancery, it was not surprising that unforeseen delays should arise; the delays which did arise were of the most peculiar character. He did not propose to detain the meeting with a history of the litigation in connection with this company, because if he were to attempt to do so he would probably keep the shareholders there at least a week, and even then would fail to convey a clear idea of it, for certainly without notes he believed no practitioner in the Court of Chancery would be able to give a clear notion of this extraordinary suit. He would begin with the incumbency of the late board. The delay in the conveyance of the estate had been chiefly caused by the litigation of Messrs. Dent and the vendors, with which the company were not directly connected. Mr. Bird had differences with Messrs. Dent which required to be settled before he could convey to the company that portion of the estate which they purchased from him. In order to simplify the matter, and bring it to a more speedy issue, the late board obtained a "consent order" in the Court, which was a sort of resumé of former agreements. The proceedings with respect to the vendors may be considered to take date from then. He could not explain why immediately after that "consent order" was given the company should not have received the conveyance—that is a mystery to be solved only by those conversant with Chancery proceedings. At the last moment, however, a question arose as to how the estate should be described in the deed—that question, in an indirect manner, had often been before the former board, the numerous plans submitted, as far as he knew, being all more or less incorrect. There did not exist any accurate plan of the country, but from among the many plans in existence he pointed out the particular one, which, from the nature of its inaccuracies, was in favour of the company. At that moment he did not think there could possibly arise any difficulty upon that point. Quite recently, however, this question was revived, and had to be dealt with by the present board. The vendors objected to the number of acres purchased by the company being named in the conveyance, asserting, what was true, that the acreage had not been stated in the "consent order." They insisted that the estate should be described by plan only, and, when pressed, by one particular plan. Seeing how affectionately they clung to this particular plan, the present directors felt bound to look very closely into it, and this extraordinary fact was brought out by the examination—that the scale used for de-

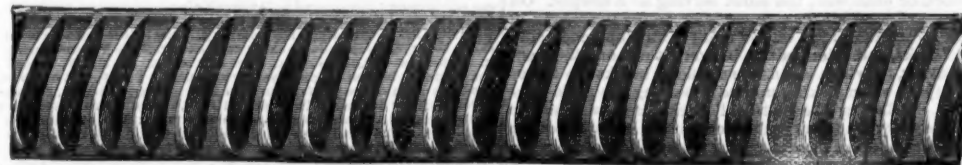
PORTABLE ENGINES,

FROM 4 TO 30-HORSE POWER.

THRASHING MACHINES,

Single, Double, and Treble Blast, with Patent Rolled Steel Ribbed Beater Plates, and all other recent improvements.

PATENT ROLLED STEEL RIBBED BEATER PLATES.



CLAYTON & SHUTTLEWORTH, Sole Licensees and Manufacturers.

These Plates have been thoroughly tested, and are found to wear more than three times as long as the Malleable Iron Plates previously in use. C. and S. are prepared to supply Thrashing Machine Owners and the Trade in any quantity, and they would caution purchasers against spurious imitations in cast-steel, which, from their brittleness, are extremely dangerous to use.

CAUTION!—Infringers of this Patent, whether Makers or Users, will be immediately prosecuted.

CATALOGUES SENT FREE BY POST ON APPLICATION TO

CLAYTON & SHUTTLEWORTH, Stamp End Works, Lincoln,
Or 78, LOMBARD STREET, LONDON, E.C.

fining the limit of the estate was different from the scale used for depicting the general features of the country in which that estate is situated, and that the estate so defined contained little more than one-half the area to which the company was entitled. Through the determined posture which the board assumed the Master of the Rolls rejected this grossly incorrect and unjust plan, and he also ordered that the number of acres (275,000) purchased by the company should be named in the conveyance. There is no mention that one signature had yet to be attached—it was the signature of Mr. Thomas Dent, who will sign as having no interest in the property, but with a view of meeting some possible demands of the Venezuelan law. The deed was perfectly valid without Mr. Dent's signature; and, therefore, the shareholders might consider they had now legally conveyed to it 275,000 acres in Venezuela. Though this most important result had been achieved by the exertions of the present board, it is only just to say that their predecessors did much to pave the way towards it. (Hear, hear.) The next paragraph in the report alluded to the cargo of timber. The total cost of that timber, including freight, insurance, &c., was 445,481, and there had been actually sold timber which realized 463,921, there remaining unsold four descriptions of wood, which they knew could be sold at once for 332,1, but the directors were advised that by waiting a little some changes in the market would give them a better price. Taking the remaining unsold portion at the current prices, the whole would realise an aggregate sum of 503,12, leaving a balance in their favour of 573,1, upon that one cargo. The only actual capital employed in that transaction had been 17,001, the cost of cutting and putting it on board at Tucacas, upon which there had been realised a profit amounting to 573,1, which all would agree was a very favourable result, and the more especially when it was known that the cargo was not selected at all. As it had been, because it contained some descriptions of wood in larger proportions than should have been the case; but, after the instructions they had received from their timber agent, they thought the future cargoes would be more fitted for the London market. A smaller vessel had likewise been chartered, and the wood was ready to be shipped. Although this timber trade was not likely to yield good dividends upon the capital of the company, still it reduced the expenses; and, such being the case, he thought the shareholders would agree with the directors that they were justified in carrying it out in a moderate way. (Hear, hear.) He would now pass to the establishment at Venezuela, and the establishment at home. He need hardly say they had felt it their duty to reduce the expenses as much as possible till a communication had been effected between the mines and the sea. Of course, it was necessary they should have somebody to protect their property, and to attend to the various interests of the company in Venezuela. He held in his hand a comparative statement of the expenses of the two establishments as they stood when this board was appointed and as they now stand, by which it appeared that the annual expenditure in Venezuela then amounted to 2,400,1, and the home expenses to 25,921,1; whereas the present outlay in Venezuela was 11,901,1, and at home 14,111,1, which comprises the secretary's salary, 500,1; office rent, 1,001; clerks, 1,901; auditors, 211; and the directors, 600,1 instead of 1,000,1. When the present directors took office the annual expenditure amounted to 5,043,1, whereas at the present time it was only 2,601,1, equal to a saving of 2,442,1. (Hear, hear.) The amount of their foreign liabilities had been ascertained and cleared off, with the exception of one item of about 200,1. He would next pass to a subject in which everyone felt more interest than in any to which he had yet alluded—the subject, indeed, which had constantly occupied the attention from the time they took office. During that time they had been open to the reception of counsel and advice as to the best means of effecting a communication between the mines and seaboard. In their deliberations they had, of course, considered that method which had been so often alluded to in their meetings—he referred to Boydell's traction-engine; another plan suggested was that called the wire tram; and another scheme was that brought before the board by one of their colleagues—Mr. Pyne—consisting of a very peculiar arrangement of a single rail, upon which the engine and the carriages ran. It took a considerable amount of time and trouble to investigate the various projects submitted, the whole of which had received their most impartial consideration. As to Boydell's engine, the directors took the opinion of Mr. Brydges Adams; and with regard to the wire tramway, the directors proceeded to Leicester, for the purpose of inspecting the only line that had been made, and had had frequent interviews with its inventor, and he (the Chairman) must say that Mr. Hodgson did not encourage them to adopt that plan, nor advised its introduction, stating that his scheme was not then ripe for the magnitude of the company; and as to the single rail system, the directors did not see their way clear to work it out. The result of his (the Chairman's) experience was that it would be very difficult indeed for a board of directors to carry out works for the directors of making Boydell's engine. They were works not undertaken in the usual way by contractors, and no contractors to whom the board had spoken were willing to enter into such a contract. They had, moreover, come to the conclusion that they would not be able to raise the money necessary by putting before the public an indefinite or experimental scheme. The effect of their proposal upon investigation by the public was the question which did not receive sufficient attention from the parties whom he would venture to call their irresponsible advisers. In point of cheapness, it was doubtful whether the wire tram called a cheap plan would turn out to be the cheapest. The responsibility rested with the directors of making the best terms they possibly could with the contractors, after having selected a good contractor. That was a responsibility the present directors were quite prepared to accept. It involved a good deal of trouble and discussion, from which they did not shrink, and it also involved a considerable amount of moral responsibility—that, likewise, they were willing to undertake; but it did not involve the looking after, possibly the misdeeds, of their servants in Venezuela, and it did involve the responsibility of a loss included in sickness and death—all those risks were thrown upon the contractors. Many proposals had been before the board, but the most favourable had been made by one of the first—if not the very first—contracting firms in England—the Messrs. Waring Brothers. They had made an offer which the directors thought was sufficiently favourable for the formation of a basis for future negotiations. He would ask whether such a scheme was not likely to earn the confidence of the public—a railway to be made as cheaply as possible, by a firm like the Messrs. Waring? That was a scheme of so definite a character that anybody wishing to embark money in such an enterprise could at once understand the risks, and what the probabilities of success. He should remind the shareholders that by the Articles of Association the board possessed the power to enter into this contract, and to raise the funds necessary; but the directors had never dreamt of using that power, and had never heard it mooted at the board; and if they thus abstained from using a legal power, they were unlikely to have recourse to any questionable proceeding, putting aside the question of the personal character of the board. At present no definite terms had been arranged, all the directors now asked being that the shareholders sanction the principle of a railway, which would justify them in taking a preliminary contract in a great deal of money. The directors would then call a special meeting for the purpose of laying before the shareholders the precise terms of the contract, and ask their sanction to money being raised in the manner then proposed. That he thought all would admit was a mode which did not savour of concealment. (Hear, hear.) To-day the directors could not give any details, all they could say was that Messrs. Waring had made an offer which may lead to a contract. Messrs. Waring were now carrying on works in Honduras, which would give them great facilities for carrying on this company's works. Moreover, they had the experience gained in that country. Therefore, as the Messrs. Waring were well known for their uprightness, and their skill as engineers, as well as for their possession of local advantages, it was desirable to have them as contractors should a railway be made. (Hear, hear.) As a board of directors enjoying the general confidence of the shareholders, they had come to the unanimous decision that the only satisfactory means by which to effect a communication between the mines and the sea was to make a contract with a first-rate firm only, and, as he had stated, in furtherance of that view they had named a firm of contractors of the highest standing, with whom it was possible satisfactory terms could be arranged. (Hear, hear.) The directors, therefore, advised the shareholders to pass the resolution which involved the principle of the construction of a railway, when they would at once go into the details of the contract, which at the earliest date would be laid before the shareholders. The next paragraph in the report alluded to the proceeds of calls, which required no comment from him. The next paragraph referred to the survey, which had been completed during the tenure of this board's office. This survey had been exceedingly valuable to them in two ways—it facilitated very much the proceedings in Chancery, while the engineer was more than once referred to by the Master of the Rolls, and there could be very little doubt that the information he was able to give had much to do with the settlement of the question of the boundaries, and particularly with regard to the boundaries. The survey was also useful to them in their negotiations, so far as they had gone with Messrs. Waring. The next paragraph referred to the desire on the part of the directors to obtain more information with regard to the resources of the property. With that view a German gentleman, of high scientific attainments, had been sent out to examine the country more systematically than any body hitherto had been able to do, and the board had received from him very voluminous reports, confirming all former reports in some respects, and going beyond them in others. He had made a very close examination of the mines, and he says that the Aroa Mine is so rich that the company never need open any other mines upon their estate, as it will last for generations. He also told them that gold was to be seen near the mines. He (the Chairman) did not mention this fact in order to produce a little sensational effect, but rather the reverse, as, although, according to the testimony of this scientific gentleman, there appeared to be no doubt as to the existence of the gold, and he had asked the sanction of the board to allow him to incur some trifling expenses—500,1 or 600,1—to make further investigations, yet he says that even a comparatively rich gold mine is not so rich, and would not pay so well as the Aroa Mine worked upon a large scale. (Hear, hear.) He thought that he had now gone through the whole report, and had laid before the meeting as clearly as he was able to do the decision the board had arrived at on the main matter upon which it was their duty to decide; and, therefore, he would conclude by moving that the report and balance-sheet be received and adopted. (Hear, hear.)

Mr. THOMSON seconded the proposition. With regard to the plan so often put forward by Mr. Hemming, he (Mr. Thomson) believed that, although the Boydell engines had been experimentally tried, yet that there was not one of them now practically working in any part of the world. It was, perhaps, to be regretted that the late board had not made an experiment with this plan, but now that they would have to go to a tired-out and dispirited body of shareholders to ask them to subscribe 80,000,1, to carry out such an experiment it was a totally different thing, the more especially as the other alternative was a contract for a railway with a thoroughly stable and tried contractor. (Hear, hear.) He would rather elect in the present case to make further investigations, yet he thought that even a comparatively rich gold mine is not so rich, and would not pay so well as the Aroa Mine worked upon a large scale. (Hear, hear.) He thought that he had now gone through the whole report, and had laid before the meeting as clearly as he was able to do the decision the board had arrived at on the main matter upon which it was their duty to decide; and, therefore, he would conclude by moving that the report and balance-sheet be received and adopted. (Hear, hear.)

Mr. LEROY wished to know whether the adoption of the report committed the shareholders to an expression of opinion upon the subject of a railway?

The CHAIRMAN thought he had better read the resolution, which was to the effect that the directors' report (embodying the principle of the construction of a railway from the sea to the mines, as now explained by the Chairman), together with the balance-sheet and accounts now presented, be and they are hereby approved and adopted.

Mr. GEDGE called attention to several items in the balance-sheet, including that relating to Mr. Pittar's claim, and stated that although he did not wish to throw discredit into the meeting, yet he felt it his duty to move an amendment to the effect that so much of the accounts as related to Mr. Pittar should be struck out, as it was not a fair asset.

Mr. HEMMING seconded the amendment as regarded the item on account of Mr. Pittar, and stated that this might possibly be the last time he should address the shareholders of this company, because if the plan suggested by the Chairman be decided upon he (Mr. Hemming) would not raise any factious opposition. (Hear, hear.) He did not feel he should be justified in doing that without first putting before them the simple plan which would enable them to decide whether he should proceed with it or not; and, therefore, he should propose that this meeting do adjourn for a month, to give the whole body of shareholders that opportunity which was now given to certainly not one-tenth, of expressing their opinion, after they had had facts and data before them, upon this important point. He then proceeded to describe his plan, so often referred to in his different speeches, and fully explained in his many pamphlets. He stated, however, that he was not at all pledged to Boydell's engine. The whole question was whether it would be better to make a road for about 20,000,1 in a year or a year and a half, or whether they should expend 126,000,1, 198,000,1, or 212,000,1 in two and a half or three years. Supposing the road which he suggested should not be wanted it would be exceedingly valuable to any contractor who might come in. If the majority of the shareholders, however, endorsed the proposal of the directors he should bow to their decision, and "shut up shop." (Laughter.) If, on the contrary, they adopted his plan, which he thought would commend itself to the common sense and also to the pockets of the shareholders, he would place his services at their disposal, if they would accept them, and of such gentlemen as he would ask to act with him that would command the confidence of the shareholders and also of the public.

A SHAREHOLDER said it was useless discussing about schemes until they knew how the means were to be raised. He asked from what period the reduction in the expenditure was dated?—Mr. SMALLPRICE (a director) said that the reduction dated from June last. When they were elected directors they, of course, took over the existing arrangements of the former board, and until those expired they were unable to reduce the expenses.

Mr. LEROY suggested that the motion should be merely the adoption of the report, deferring any expression of opinion about the railway until the terms of the proposed contract were known.

Mr. CORBET said the directors did not ask the shareholders to pledge themselves to the construction of a railway, but merely to allow them to go into negotiations with a firm of contractors, and after having ascertained the terms of the contract, to submit them to a special meeting, convened for that special purpose—in other words, to ask the shareholders their opinion upon the subject. He believed the great majority of the shareholders would support the board.

The CHAIRMAN explained that the board were quite willing to adopt the suggestion with regard to the omission from the resolution the parenthetical clause referring to the principle of the construction of a railway; for the board would certainly submit every detail to the shareholders, in order to obtain their authority to raise the money. The directors did not intend to raise 1d. for any purpose or for anything connected with the works, without asking the sanction of the shareholders—that, he thought, was as much control as any body of shareholders could possibly possess.

The amendment having been withdrawn, the resolution, in its altered form, was put and carried, with but one dissentient.

The CHAIRMAN then read the last paragraph of the directors' report, and the directors who did retire were Mr. Charlton and himself, the Chairman. The shareholders did them the honour to re-elect them, and it was his pleasure to move the re-election of Messrs. Smallprice and Pyne, both of whom were valuable acquisitions to the board.—Mr. HEMMING seconded the proposition, stating that although his (Mr. Hemming's) name, as well as that of Mr. Smart, had been put in nomination, both would be withdrawn.

The motion was put and carried unanimously.

Messrs. Lovering and Minton were re-elected auditors, and Mr. Whalley was re-elected secretary.

The resolutions, of which notice had been given, referring to the reduction of the directors' remuneration and the cost of management, were read, but were not proceeded with.

Mr. HEMMING said that they could not allow the meeting to separate without expressing the thanks of the shareholders to the Chairman and directors for the trouble taken and courtesy shown in the management of the company's proceedings, and of this meeting.

The motion being duly seconded, was put and carried unanimously.

The Chairman appropriately acknowledged the vote.

The meeting then separated.

VANCOUVER COAL MINING AND LAND COMPANY.

The half-yearly meeting of shareholders was held at the City Terminus Hotel, Cannon-street, yesterday.

The Hon. Mr. FITZWILLIAM, M.P., in the chair.

The report of the directors (an abstract of which appeared in last week's Journal) was taken as read.

The CHAIRMAN, in moving its adoption, stated that it was rather unfortunate the directors were unable to declare quite so large a dividend as they could have wished, or as the original prospectus set forth.

There had been some falling off in the quantity of coal, while the price had not been so large as previously. The quantity of coal actually sold, however, had been more certain, a larger quantity having been sold under contract. Their returns also for a certain quantity of coal had been more certain, and, therefore, they were dependent upon individual consumers. Adverting to the accounts, he stated that in the last accounts the coal at bank was taken as worth 85, while the coal was contracted to be sold at 85½. The board did not propose to avail themselves of the increase between the actual cost and the price at which the coal was valued. A considerable amount, therefore, was carried forward to the next account, forming in that way a reserve fund. A contract had been made at San Francisco, and they had been able to dispense with the services of Mr. Nicholl, who had hitherto been at the head of the company's affairs in the Pacific. Mr. Nicholl, having retired from the service of the company, the board, in addition to his salary, had voted him a sum of 300,1 as compensation for loss of office. Although that gentleman's connection with the company had ceased, the directors wished it to be distinctly understood that Mr. Nicholl's services had been dispensed with solely with the view to economy. The accounts showed a balance of 855,1, out of which the directors proposed to declare a dividend at the rate of 15 per cent. per annum, which would absorb 615,1, leaving 239,1 to be carried forward, and to be made available at some future time for a reserve fund. He then moved that the report and balance-sheet be received and adopted.—Mr. GALSWORD seconded the proposition.

Mr. HILL referred to the item of 500,1 for directors' fees, and said that he thought it would have come more consistently had this large original sum of 1000,1 per annum been included in the balance-sheet when the larger dividends were declared, as it was, at least, unfortunate to have selected the period when a reduced dividend was proposed to be paid. He proposed, as an amendment, that the sum of 375,1 be substituted for that of 500,1, and that the number of the directors be reduced to five instead of eight.

Mr. GALSWORD (a director) rose to a point of order. He, however, stated it was his own feeling that the number of directors should be reduced to five, but that while the board consisted of eight members he certainly thought that 1000,1 as remuneration was not excessive. He suggested that the least invidious mode by which the board could be reduced would be by not filling vacancies as they occurred at the board by death, disqualification, or otherwise.

After some further discussion, Mr. HILL consented to withdraw his amendment, it being understood that the question he had raised would receive the attention of the board.

The motion adopting the report was carried unanimously.

A dividend at the rate of 15 per cent. per annum was declared.

A vote of thanks to the Chairman terminated the proceedings.

MINING, METALS, AND MINERALS—PATENT MATTERS.

By MICHAEL HENRY.

Patent Agent and Adviser, Memb. Soc. Arts, Assoc. Soc. Eng.

Mr. J. H. JOHNSON, of Lincoln's Inn-fields, has specified a patent for an invention relating to artificial stone blocks applicable to streets, railways, and building purposes. (Communicated to him from abroad by Francois Coignet, of Paris.) This invention has reference to the artificial stone blocks known as beton agglomeré, and consists in facing those parts of such blocks as are most liable to become worn or injured when in use with cast-iron or steel protecting plates, whereby the durability of such blocks is greatly increased. The protecting plate or plates are secured to the blocks either by clau-bolts, secured to or cast in the plate, and embedded in the substance of the block at the time of running the materials into the mould, or by bolts and nuts. It is proposed to employ these protected blocks as street curbs, steps, and other parts of buildings and flags, in which case the corner or angle, or other surface most exposed to hard wear, is protected by an angle piece of steel or cast-iron. The shape of the protecting piece may be varied according to requirement. It is also proposed to use these artificial blocks provided with protecting plates on their surfaces, having either a raised rib or a sunk groove on their surface to serve as wheel tracks for ordinary vehicles, or for the wheels of street railway carriages. Sometimes a central rail alone may be used in lieu of two side rails for guiding the carriages, but in all cases the rail or plate forming the track forms also a protective covering for the block, and is secured thereon by clau-bolts or nuts, and screws as before described or otherwise, the block serving as a sleeper. On each side of these artificial blocks a recess is made for the reception of paving blocks, or stones laid in one or more rows along each side of the artificial blocks, and intermediate between them and the macadam of the roadway, by which means the artificial blocks are better protected from injury when picking up and repairing the main portion of the road. In laying the artificial blocks, it is proposed to join them end to end by a tongue and groove joint, a projection on the end of one block entering a corresponding recess or notch in the adjoining end of the next block.

Messrs. C. DRAKE, W. DRAKE, and J. DRAKE have specified a joint invention for machinery suitable for breaking stone to prepare it for the manufacture of concrete, and for other purposes, also in machinery for mixing concrete. For breaking stone and other hard material rollers are employed with corrugated surfaces. The grooves run around the rollers; their sides are parallel, and the grooves in one roller are set to correspond with the projections or ridges on the other. The rollers are mounted horizontally on parallel axes; they are caused to rotate by powerful driving gear, and the material to be

broken is fed in between them. The ridges may have ratchet-like teeth or grooves cut upon them to cause the rollers to take down the materials between them with greater certainty.

THE INSTITUTION OF CIVIL ENGINEERS.

PREMIUMS—SESSION 1868-69.

The Council of the Institution of Civil Engineers have awarded the following Premiums:—

1.—A Telford Medal, and a Telford Premium, in books (to consist of a complete set of the publications of the Institution), to M. JULES GAUDARD, C.E., Lausanne, for his paper "On the Present State of Knowledge as to the Strength and Resistance of Materials."

2.—A Telford Medal, and a Telford Premium, in books, to WILLIAM SHELFOUR, M. Inst. C.E., for his paper "On the Outfall of the River Humber."

3.—A Watt Medal, and a Telford Premium, in books, to ZERAH COLBURN, M. Inst. C.E., for his paper "On American Locomotives and Rolling Stock."—[Has previously received a Telford Medal.]

4.—A Telford Medal, and a Telford Premium, in books, to THOMAS NESHAM KIRKHAM, M. Inst. C.E., for his paper "Experiments on the Standards of Comparison employed for Testing the Illuminating Power of Coal Gas."

5.—A Telford Medal, and a Telford Premium, in books, to JOHN ELLACOTT, M. Inst. C.E., for his "Description of the Low Water Basin at Birkhead."

6.—A Telford Medal, and a Telford Premium, in books, to Prof. DAVID THOS. ANSTED, F.R.S., for his paper "On the Lagoons and Marshes of certain parts of the Shores of the Mediterranean."

7.—A Telford Premium, in books, to WILLIAM HENRY WHEELER, M. Inst. C.E., for his "Description of the River Witham and its Estuary, and of the various Works carried out in connection therewith, for the Drainage of the Fens, and the Improvement of the Navigation."

8.—A Telford Premium, in books, to JAMES ROBERT MOOSE, M. Inst. C.E., for his paper on "The Mauritius Railways—Midland line."

9.—A Telford Premium, in books, to IMRIE BELL, M. Inst. C.E., for his paper "On Sinking Wells for the Foundations of the Piers of the Bridge over the River Jumna, Delhi Railway."

10.—A Telford Premium, in books, to JOHN MILROY, Assoc. Inst. C.E., for his "Description of Apparatus for Excavating under Water, and for Sinking Cylinders."

11.—A Telford Premium, in books, to SAMUEL PARKER BIDDER, Jun., Assoc. Inst. C.E., for his paper "On Machines employed in Working and Breaking Down Coal, so as to avoid the Use of Gunpowder."

12.—A Telford Premium, in books, to CHARLES JOHN CHUBB, for his paper "On Coal-getting Machinery as a Substitute for the Use of Gunpowder."

13.—The Manby Premium, in books, to DAVID MARR HENDERSON, Assoc. Inst. C.E., for his paper "On Lighthouse Apparatus and Lanterns."

The Council have likewise awarded the following Prizes to Students of the Institution:—

1.—A Miller Prize to EDWARD BAZALGETTE, Stud. Inst. C.E., for his paper "On the Use of Concrete in Building Operations."

2.—A Miller Prize to FREDERICK HARRY MORT, Stud. Inst. C.E., for his paper "An Inquiry into the Nature and Causes of some discrepancies between Theory and Practice."

3.—A Miller Prize to TRISTIE JAMES ELLIS, Stud. Inst. C.E., for his paper "On the Artistic Design of Bridges."

4.—A Miller Prize to THOMAS ROBERT GAINSFORD, Stud. Inst. C.E., for his paper "On the Construction of a Railway Tunnel, or Covered Way, at Bradford, Yorkshire, among abandoned Coal and Ironstone Workings."

5.—A Miller Prize to CHARLES HENRY GREY JENKINSON, Stud. Inst. C.E., for his paper "On Wrought-Iron Girder Bridges."

6.—A Miller Prize to GEORGE HENRY ROBERTS, Stud. Inst. C.E., for his paper "On Reservoir Embankments."

The meetings of this society, which was established and incorporated by Royal Charter, "for the general advancement of mechanical science," are to be resumed on Tuesday. Two subjects are announced for discussion, the "Low Water Basin at Birkhead," and "On the Present State of Knowledge as to the Strength and Resistance of Materials," founded upon papers read last session by Mr. Ellacott and M. Gaudard respectively, and both of which have since been printed and circulated.

SOCIETY OF ENGINEERS.—At the meeting, on Monday, a discussion took place on Mr. Perry F. Nursey's paper on English and Continental Intercommunication. The following candidates were duly elected as Members:—Messrs. J. Enson, Jun., Engineer to the Northampton Gas Company; Edward V. O. Haldane, late Assistant Engineer, Hyderabad, Deccan; John Grey Hall, City Surveyor, Canterbury; Matthew J. Jennings, C.E., Durham Lodge, New Cross; Wm. Roebuck, Ellington-street, Arundel-square; Thomas Small, M.E., Gloucester; Robert P. Spice, Consulting Engineer, 21, Parliament-street; Thos. Warden, M.E., Birmingham; Thos. Wilkins, M.E., Orchard Works, Ipswich.—As a Foreign Member: Lient. John Grierson, Bombay Staff Corps, late R.A.—As an Associate: Samuel Cutler, Jun., Providence Ironworks, Millwall, Poplar.

GEOLOGICAL SOCIETY.—Papers for the first meeting on Wednesday:—"On Australian Mesozoic Geology and Palaeontology," by Charles Moore, F.G.S. "On Plant and Insect Beds in New South Wales," by Charles Moore, F.G.S. "Further Evidence of the Affinity between Dinosaurs and Birds," by Prof. Huxley, F.R.S., President. "On a New Genus of Dinosaurs (*Hypselophodon*)," by Prof. Huxley, F.R.S., President.

[ADVERTISEMENT.]

From Mr. EDWARD COOKE:—There is nothing particular to report on the state of the market, with the exception of an important drop in the price of EAST LOVELL shares. As will be seen by the manager's report, there is a falling off in the value of the lode in the eastern end, but still a fine course of tin, while the lode in the western end is larger and improving. It appears that the tin ground is taking a more westerly dip. The pans in the area are, in opinion, attributable to bona fide shareholders selling, but to the speculation of operations of the market. If the lode had continued of the same value as it was a short time since, the shares would have been cheap at 50, each. It is, doubtless, a very rich mine now, with a good deal of valuable tin ground to take away from the north lode above, and it should not be forgotten that the south lode is also a valuable adjunct. The profits for the month of October upon the sale of tin are not less, I presume, than 17,000,1, and the next dividend will be 27. There has been an active enquiry for BURLY CONSOLS shares. The mine appears to be not much generally known, although making good money, and is situated in one of the best districts in Cardiganshire. There are only 500 shares, and at 31. to 41. they appear to be a good investment. The management, both locally and in London, is of the most efficient character. BURLY FLOYD MINE will sample 70 tons of lead this day (Saturday). The sinking of the shaft is progressing favourably. At the current price of the shares the last dividend was equal to about 8 per cent. per annum. Of course, it will be said this is not sufficient for mining to pay. It must be considered, however, that this is a steadily improving mine, with good prospects of greatly increased dividends. By the end of this year it is expected that the shaft will be down to the required depth for another level, when the already large reserves of ore will be considerably augmented. I consider BURLY FLOYD MINE a far more eligible investment than many of the foreign stocks that are professed to return 8 to 10 per cent. per annum on their current price, and equally free from risk. Operations are being carried on at GREAT ROCK MINE with all possible speed, and the results so far are highly satisfactory to the shareholders. The new shaft is now down 25 fathoms below the deep adit, and as soon as practicable levels will be driven both east and west on what appears to be a valuable lode. There are several other places in the mine that will be wrought to advantage when the machinery is completed.

FOREIGN MINES.

ALAMILLOS.—Oct. 27: The lode in the 4th level, east of La Magdalena shaft, is unproductive. In the 5th level, east of above shaft, the lode is small and poor. The 6th level, west of same shaft, has opened some fine ore ground, but is poor at present. The lode in the 6th level, east of Taylor's engine-shaft, is large, and spotted with lead. The 6th level, west of Taylor's, yields ½ ton of ore per fathom; the ground is easy for driving, and the lode has a kindly appearance. The 5th level, west of Taylor's shaft, also produces ½ ton of ore per fathom; the lode has improved, and the ground has become much easier. In the 4th level, west of San Adrian shaft, the lode is a little larger, and good progress is being made in driving. The lode in the 3d level, east of San Victor shaft, though not quite so productive as it was, yields 1 ton of ore per fathom, and the ground is very easy. The 2d level, west of Taylor's engine-shaft, yields ½ ton of ore per fathom; the lode is improving, and is better defined. In the 3d level, east of Crosby's engine-shaft, the lode, which is worth 1 ton per fathom, looks well, and we expect this level will open good tribute ground. The lode in the 3d level, east of Crosby's cross-cut, is very small and poor. The lode in the 3d level, west of Crosby's cross-cut, has greatly improved during the past week, and now produces 2 tons of ore per fathom.—Shafts and Wines: Roas' mine is being sunk east from Taylor's shaft, below the 5th level, and is at present unproductive. The lode in Sanchez' mine, below the 3d level, is still poor.

FORTUNA.—October 26: Canada Incoza. The 110, driving west of O'Shea's shaft, yields ½ ton of ore per fathom; the lode is small, and the ground hard for driving. There is a slight improvement in the 110, east of O'Shea's shaft, the lode being regular, and producing a little lead. The 100, west of Henty's shaft, is worth 1 ton of ore per fathom; the lode is looking better and more kindly than it was. The 90, west of Judd's shaft, contains a little lead ore, but not sufficient to value. The 80, west of Judd's shaft, yields ¾ ton of ore per fathom; the ground is favourable for driving, and the lode has a kindly appearance. In the 80, south of Henty's, there is more water in the breast, which makes it more difficult for driving. The lode in the 50, east of San Pedro shaft, is large, composed of quartz and lead ore. There is no noticeable change in the 50, east of Addis' shaft, since last report. In the 80, west of Lowndes', the ground is broken up, and the lode valueless. The 80, east of Lowndes' shaft, produces 1 ton of ore per fathom; the lode is large and open, and the ground is favourable for driving. The lode in the 70, east of Carro's shaft, is very small, containing a little lead ore.—Shafts and Wines: The ground in O'Shea's engine-shaft, sinking below the 110, is without change. Cayetano's mine, below the 30, yields 1½ ton per fathom; this mine is going down on a strong productive lode.—Los Salidos Mine: The 100, east of Buenos Amigos shaft, produces 1 ton of ore per fathom; the lode is divided into three branches, which are looking very kindly. The 100, west of Buenos Amigos shaft, yields ½ ton per fm.; an improvement has taken place in this end—the lode regular, and of a promising character. The lode in the 90, west of the above shaft, is small, and the ground hard for driving. The 75, west of San Carlos shaft, yields ¾ ton of ore per fm.; the lode is small, compact, and solid. The 100, east of San Gabriel shaft, is worth ¾ ton of ore per fathom. We have reached the point where the lode on the side of the cross-course, which is regular and kindly, being composed of quartz and lead ore. The 90, east of San Pablo shaft, yields 2 tons of ore per fathom; this end is held to San Pablo shaft, and is being driven east of same; lode large and regular, composed of quartz, clay, and lead ore. The 75, east of San Pablo shaft, is worth 2½ ton of ore per fathom; this continues to open splendid

[For remainder of Foreign Mines, see to-day's Supplement.]

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MINING IN WALES—The success of the Van Mine in Montgomery-

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BANKERS—IMPERIAL BANK (LIMITED), Lothbury.

SOLICITOR—TUFNELL SOUTHGATE, Esq., 7, King's Bench-walk, Temple, E.C.

OFFICE,—8, AUSTINFRIARS, LONDON, E.C.

ABRIDGED PROSPECTUS.

The object of this company is to purchase the leases of, and to work, the Llandrindod Lead Mine, about one mile from the town of Llandrindod, Radnorshire.

Two shafts have been sunk on the course of the lode, which averages about 6 ft. wide, and at 10 fms. deep a level has been driven between the two shafts 15 fms., 12 fms. of which yield an average of 15 cwt. of lead ore per fathom, being best in the bottom of the level. This is unusually good for the depth, and is believed to be the top of a very fine deposit of ore.

The engine-shaft can be continued 20 fms. deeper (30 fms. from surface), with the aid of a horse-whim only, and the lode laid open quickly and cheaply at the 20 and 30 fm. levels, where there is the prospect of finding rich courses of ore.

Annexed are the reports of Capt. John Paull, Manager of Plynlimmon Mine, and Capt. A. Waters, of Nant. Both these agents speak most favourably of the unusual prospects of the mine, and its speedy and economical development. Capt. Waters remarks that productive ground can immediately be opened to yield returns that will pay cost, if not give a profit, and he estimates that there are already at surface 6 to 8 tons of ore.

The extent of ground in the sett on the course of the lode is more than a mile. The lease has about 14 years to run, and the dues are 1-16th.

Full prospectuses, with reports, &c., and forms of application, can be obtained from Messrs. WATSON BROTHERS, St. Michael's-alley, Cornhill, and from J. H. MURCHISON, Esq., 8, Austinfriars, London.

The following are particulars of some of the Lead Mines in Wales:—

CWMYSTWTH MINE, with a capital of £7680, has paid £49,472 in dividends, and shares are at a considerable premium.
 THE LISBURN MINE, with a capital of £7500, have paid £206,000, and shares at a high premium.
 GOGINAN MINE, with £5000 outlay, divided £44,000, and is again making profits.
 EAST DARRIN MINE, with a capital of £9600, has divided £48,900, and shares at high premium.
 CWM ERFIN MINE, with a capital of £6500, has divided £26,140, and is still making profits.
 BRONFLOYD MINE, with a capital of £12,000, has paid £12,000 in dividends, and shares are at the rate of £48,000 for the mine.
 MINERA, with a capital of £45,000, has paid in dividends £466,000, and market value about £270,000.
 VAN MINE, bought a year ago for £46,000, is selling at the rate of £450,000, and is making large profits, likely to be much increased.

It is also important to observe that while copper and tin have been very depressed in price during several years past, and indeed are subject to frequent fluctuations, lead has been comparatively steady, and is generally so. In proof of this it may be stated that while in 1862 only 14 public British lead mining companies divided a sum of £80,590, last year (1868) 18 divided £139,185. In the public Share List there appear 25 dividend lead mines, which show the following most favourable results:—

The aggregate amount of their paid-up capital is	£ 551,635
They have paid in dividends	1,688,081
Their aggregate market value is	1,481,200

Of these twenty-five mines twelve are situate in Wales, and have paid about half of the above amount of dividends. There are other lead mines in Wales and elsewhere in private hands—and, therefore, not included in the above list—that are making good profits.

REPORT.

Aug. 27.—I send you some specimens of lead ore from a young mine I visited and examined last Saturday. A shaft has been sunk on the course of the lode 10 fathoms from surface, in the bottom of which it shows lead ore in considerable quantity of the most promising character.

From the shaft a level has been driven east and west in all 12 fms., averaging 15 cwt. of lead ore per fm., being best in the bottom of the whole drive.

It is unusually good for the depth, and I believe is the top of a very fine deposit of ore. For its effectual development steam power will be necessary, but it is situate within 1½ mile of a railway station, so that coals will be cheap at the mine. I can safely recommend it to you as presenting far beyond ordinary mining prospects, and will, I believe, prove a first-class lead mine when opened up. Having considered the matter, I am fully convinced that an outlay of from £6000 to £7000 on the mine will be amply sufficient to make it a good paying concern, though by the time a much less sum has been expended I have no doubt the property will be proved to be of great value.

JOHN PAULL, Manager of Plynlimmon Mine.

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—John Roberts, Nov. 4: The lode in Rule's shaft continues quite as good as when last reported, but the heavy rains during Tuesday and Wednesday came down in torrents, consequently for the time we were compelled to suspend the sinking of the same. I hope now, however, to commence rising up against it from the level below; I find that we have only about 9 feet to rise up to complete the shaft, which we hope to accomplish about a week from this time. There is no alteration in the open stopes, which are yielding splendid lead. The Van lode in the 10 fm. level, under Rule's shaft, is looking well, and producing large rocks of lead. The mills are nearly complete. In the meantime we are making great progress on the surface for dressing the ore. The smiths and carpenters' shops and company's office are complete, and if the wheel and crusher works so well as it looks it will be very satisfactory, and will reflect great credit on the engineer.

BEDFORD CONSOLS.—J. Mitchell, Nov. 3: The new south lode at the middle adit level is about 2½ ft. wide, composed of spar, mundle, capel, peach, priant, and spots of copper ore, and is looking exceedingly kindly.

BLAENDYFFRYN.—R. Northey, J. Phillips, Oct. 29: There is no change in the ends of the 42 fm. levels, east and west of Holroyd's shaft, since we reported a few days since. We have great difficulty in finding the lode in the western ground, on account of the great depth of soil and loose rocks overlying the fast rock. We have had to sink and secure several shafts, each to a depth of nearly 40 ft., and to open drifts at that depth, having water in most cases to contend with. Everything possible is being done to trace the lode, so as to remove all uncertainty as to its position; it is, however, a work that must necessarily take time, but we have no doubt we shall soon be successful.

BLUE HILLS.—S. Bennetts, A. Gripe, Oct. 29: The engine-shaft is cleared to apparently the back of another level, and if so it is not quite 10 fathoms below the 60. In the bottom of the 60, east of the cross-cut, the lode is standing whole some 7 to 10 fathoms long, and is worth from 10½ to 12½ per fathom. Nearer the shaft, and on the north side of a slide, is a large lode 6 to 8 feet wide, and containing some good stones of tin. On this lode we propose to drive east at once. The Polgar shaft is being cleared through the skulls to this level, and when completed will be very advantageous in getting away the tinstuff from that level rather than through the engine-shaft.

BRONFLOYD.—T. Kemp, Nov. 3: Settings for November: No. 3 Shaft, North Lode: This shaft is in regular course of sinking from the 73 to the 84 fm. levels by nine men, under contract as stated in former reports; this work is progressing slowly, owing to the stiff nature of the ground. Six men to stope the lode over the back of the 73, to the west of the shaft, at 45s. per fathom; the lode is worth from 30 to 35 cwt. of ore per cubic fathom. Six men to drive the 62 fm. level end to the west of the shaft at 170s. per fathom; the lode at this point is worth for the width of the level (4 ft.) 1 ton of ore per lineal fathom. Six men to stope the lode under the 62; lode worth about 35 cwt. ore per cubic fathom. Four men to drive the 52 fm. level end to the west of the shaft, at 120s. per fm.; the lode at this point is also worth for the width of the level (4 ft.) 1 ton of ore per lineal fathom. A pitch in the back of this level to four men, at 110s. per ton of dressed lead. Two men to drive the 40 fm. level end, west on the course of the lode, at 57s. 6d. per fathom; no change here to notice.—No. 1 Shaft, South Lode: Four men to drive the 26 fm. level end to the west of the shaft, on the south part of the lode, at 170s. per fathom; the lode in the end is presenting a kindly appearance, improving in character, and producing at times excellent stones of lead ore. The drawing, landing, tramming, filling kibbles, and discharging the stuff down the incline at the dressing-floors, is set to six men, at 7½d. per ton. We shall sample on Saturday 70 tons of silver-lead ore, for sale on the 16th instant.

BRYNPOST.—John Killo, Nov. 4: The lode in the bottom or 26 fm. level, driving east of the engine-shaft, is yielding good work for lead and blende, and as we are now within 2 or 3 fms. of the slide about which we had our best ore in the upper levels, I expect the lode will continue to improve until we reach that point. The rise in the roof of the 36, east of shaft, is worth about 1 ton of lead ore per fathom. This rise I expect will be holed to the 24 in about a fortnight from this time, when we shall be in a position to set two stopes, one east and another west of same, in good ore ground. There is no change of importance to notice in any other part of the mine. We sold last week, to Mr. Adam Eytton, 20 tons of lead ore, at 11½s. 6d. per ton.

BUDNICK CONSOLS.—H. Hill, Nov. 3: We have cleared the deep adit level west, towards Whitford's shaft, also collared it with timber, so as to enable us to erect a whim to haul a quantity of rich tinstuff from the 25 fm. level. I have in view a second-hand whim, and it can be purchased on reasonable terms; no time shall be lost in the erection of the same. The masons will complete their work in about ten days or a fortnight from this time, so as to enable us to get on with the erection of the steam stamps and laying out the dressing-floors. Taking into consideration the present prospects of the mine, my opinion is that, with judicious management, Budnick Consols will still be a good dividend-paying mine.

BWADRAIN CONSOLS.—R. Northey, Oct. 30: The lode in the engine-shaft, sinking below the 45, is 2 ft. wide, composed of killas, jack, and a mixture of lead ore, and the men making good progress in sinking. The lode in the 45 west is ½ ft. wide, containing spots of lead ore, jack, and quartz. The lode in the 25 is letting out more water than usual, and the lode looking more promising for lead ore. I do not see any change in any of the stopes to notice. We are getting on well with the wheel-pit for drawing-machine. Our dressing operations are going on as usual.—P.S. I am glad to add as a postscript that since writing the foregoing we have cut into a nice branch of lead ore in the 46, worth from 18 to 20 cwt. per fathom.

BWLCH CONSOLS.—R. Northey, Oct. 30: The lode in the 70 is 1½ ft. wide, carrying a mixture of lead ore. The lode in the 60 is 2 ft. wide, producing good stones of lead ore, and likely to improve as we drive east. The lode in the 50 is 3 ft. wide, and worth 14 cwt. per fathom. The stopes in back of the 50 are

worth on an average 1 ton per fathom. The stopes in the back of the 30 is worth 1¼ ton per fathom. I see no change in any other part of the mine to notice. The lode in the 30 is still in a disordered state, and we are cross-cutting south to see if any price can be found in that direction. Dressing going on as usual.

CAPE CORNWALL.—R. Pryor, J. Davey, Nov. 2: The ground in the 100 and 70 fm. level cross-cuts in this mine is without change to notice. Saturday next being our pay and setting, a full report shall be forwarded you.

CARADON CONSOLS.—S. Bennetts, Nov. 2: There is no further lode cut in either the 90 or 78 fm. levels cross-cuts north, and the ground in each end good. Clymo's lode, in the 90 west, is 4 ft. wide, and yielding about 1½ ton of ore per fathom. The same lode east is 3 to 3½ feet wide, saving work throughout, and containing some excellent grey and black ore in the gossan parts of it; also, a most promising lode. No. 2 lode, in the 78 west, continues small towards the back of the end, but is from 1 to 1½ ft. wide in the bottom, and good dredgy work.

CEFN BRWYN.—James Paull, Nov. 2: The lode in the two stopes over the 92 east is from 3 to 6 ft. wide, and will produce on an average 18 cwt. of lead ore per fathom. At the 80 west the lode is improving again, now worth 12 cwt. of lead ore per fathom, and also producing some good blende. In the stopes over this level the lode will yield on an average 14 cwt. of lead ore per fathom. The 56 east is in a large and promising lode, but without ore at present. The lode in the 20 east is about 2 ft. wide, composed of spar, gossan, mundle, blende, clay-slate, with occasional spots of lead ore. The dressing and all surface operations are being urged on with vigour. We sample 30 tons of lead ore from this mine to-morrow, and shall shortly dress up the blende we have deposited on surface, which I estimate to be about 30 tons or upward.

CHANTICLEER.—William Wasley, Nov. 4: Last Saturday being our setting-day, I set the 120 yard level to drive west of the shaft, for this month, at 3½ per fathom. The men to pay all the usual. The lode in the present end is rather small, but I expect it will open out wider after driving about 3 or 4 yards further. The tribute shaftmen are now sinking the shaft, and I am glad to say are getting some nice lumps of ore. I sold a parcel of ore yesterday, at 11½s. 6d. per ton, cash on weighing, which I expect we shall do to-morrow.

CHIVERTON VALLEY.—James Jullif, James Trevillion, Nov. 4: Retallack shaft, sinking below the 75, is down nearly 5 fms.; the ground continues stiff, and spare for progress. The lode in the 75 west is 2 ft. wide, containing flookan, quartz, and blende. The lode in the 75 east is 2½ ft. wide, and will yield 4 cwt. of lead ore per fathom, and the ground easy for progress. The rise in the back of this level is communicated to the winze sunk below the 65, which has well ventilated our bottom level. The lode in the 65 west is 1½ ft. wide, composed principally of flookan.—Tregoning's Shaft: The men are making fair progress in sinking this shaft, which is down nearly 6 fms., and timbered up secure.

COLQUITE AND CALLINGTON UNITED.—James Evans, Oct. 30: In driving south the lodes are more porous, and letting down more water. We have tried to keep the water with the lift now fixed, but find it too costly; therefore I have ordered the engine to be stopped until the rods can be got ready and connected to the wheel. The wheel is now in thorough repair, and 9 in. wider than before; and instead of the water coming into the breast it now acts directly on it. The wheel now is at least double the power it was before, and no doubt will keep the water easily after the new lift is fixed. I calculate in a fortnight to have rods fixed and wheel at work, provided the weather is favourable. By the time we are ready to work the wheel I expect a full supply of water to work it. As soon as we get the wheel to work we shall commence water we have, or a still greater quantity. The lode going south is throwing off mundle, and silver-lead is taking its place.

CUDDRA.—F. Puskey, Nov. 3: Walker's Engine-Shaft: We have fixed the plunger-lift in the 142, and are now forcing on the sinking of the shaft below that level, by nine men, with all possible speed. In the 142 fathom level end, driving west of the shaft, by the side of the lode, the ground therein is mixed with branches dropping into the lode, and containing a little tin; the end is west of the shaft, from the present end, we have again intersected a lode or branch, which is looking very promising as far as cut into, containing good-looking quartz and peach, but unproductive for tin. In the winze sinking below the 130 the ground is a little more favourable for progress. The lodes in the different stopes throughout the mine are without alteration.

CWM ERFIN.—Nov. 2: In the 32 fm. level, west of engine-shaft, the lode is ½ yard wide, composed of clay-slate, good stones of copper ore, and spots of lead; had the copper been lead it would be worth ½ ton per fathom. The stopes in the back of this level is worth 1½ ton of lead ore per fathom. In Taylor's shaft, sinking below the 10 fm. level, the lode is 1 ft. wide, unproductive of mineral. The lode in the rise in back of the deep adit is 2 ft. wide, still open and ugly, but of no value. There are three stopes in the back of this level, producing 2 tons of ore per fathom each, and one stopes worth 12 cwt. per fathom. The lode in Taylor's drift is 1 ft. wide, composed of kill as, veins of spar, and spots of blende. In the rise in the back of Taylor's drift the lode is 18 in. wide, composed of killas, quartz, and small cubes of lead ore. The lode in the stopes in the tailing killas, quartz, and small cubes of lead ore. The lode in the stopes in the Williams' level, east of boundary, the lode is 2 ft. wide, composed of killas, quartz, and spots of mundle.

CWM RICKET.—S. M. Ridge, Nov. 3: The 10 fm. level, driving north-west of the engine-shaft, continues good, and productive for lead ore of a rich quality; we have drawn to surface a good pile of ore stuff from the driving of this level. We have also cut the lode in the 10, where I put the men to cross-cut last week, but there is no lead in it to value; there should be a rise put up through into the end of the shallow adit, or a line sunk down through for ventilation, as it is badly wanted. I have to-day put the men to drive the 10 fm. level south-east of the engine-shaft, upon the course of the lode, and am glad to say we have good rods of lead in it, and quite likely for a further improvement; the water is rising out very strong from the lode in the bottom of the level, which in my opinion is a good sign, and I think we shall have a good and productive lode in depth.

DEEP LEVEL.—Nov. 1: The lode in the deep level west, on deep level vein, is 14 in. wide, looking promising, composed of spar, containing spots of lead ore.

In the 204, west of Eytton's shaft, on Pant-y-go vein, the lode is 12 in. wide, producing occasional stones of lead. The lode in the 142, west of Pant-y-go shaft, is in disordered ground. We are making good progress in re-opening the 146, south of north shaft, on Pant-y-frith vein. We have put four men to re-open the 146, north of the shaft, as we wish to see the ends as soon as possible. We have 10 pitches working, producing on an average 1 cwt. of lead ore per fathom.

EAST ROSEWARNE.—C. Glasston, Nov. 3: In the 125, west of King's shaft, the ground is very much improved for driving; the price has got from 12, down to 5½, per fathom. If this ground should last we shall soon get under the ore in the 115; the lode is 18 in. wide, worth 4½, per fathom. The stopes in the back of the 115 are not looking so well as when last reported.

EAST ROSEWARNE.—C. Glasston, Nov. 4: In the 125 fm. level, west of King's shaft, the ground is very much improved for driving; the last setting price was 12½, per fathom, now set at 5½, per fathom; the lode is 15 in. wide, worth 4½, per fathom, and likely to improve as we get west under the ore in the 115 fm. level. In the 115 fm. level, west of shaft, the lode is 9 in. wide, worth 6½, per fathom. In the 105 fm. level, west of shaft, the lode is 8 in. wide, producing good stones of copper ore, but not enough to value. The winze in the bottom of the 95 fm. level, west of shaft, is suspended for the present, the water being too much to allow us to sink.

EAST WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Oct. 30: Setting Report: The 120 east, by six men, at 6½, per fathom; and 1 ton of copper ore per fathom, with tinstone worth 9½, per fathom; here we anticipate meeting the cross-course shortly. The 65 east, by four men, at 7½, 10s. per fathom; lode 18 in. wide, and sprigged with yellow ore throughout. The 55 east, by four men, at 5½, per fathom; lode 2 feet wide, worth from 1½ to 2 tons of copper ore per fathom. The stopes above this level, to four men, at 47s. 6d. per fathom; lode worth 1½ to 2 tons per fathom. The 45 east, by six men, at 5½, per fathom; this has a most kindly appearance. The stopes above this level, to four men, at 60s. per fathom; lode worth 1½ to 2 tons per fathom. The 35 east, by four men, at 5½, per fathom; lode 1 foot wide, principally quartz. From the run of ground below we think we shall shortly have an improved lode here.—Tribute Department: We have to-day set six pitches, to 15 men, at an average tribute of 9s. 5d. in 12.

EAST WHEAL LOVELL.—R. Quantrell, Nov. 2: North Lode: We have still a splendid lode east, west, and in the bottom of the shaft. In the eastern end the lode is not quite so large, but still a fine course of tin. The bottom of the shaft I never saw looking better, and in the western end the lode is larger, and improving as we sink, and looking as if it would open out a fine run of tin ground westward, which speaks well for the western ground, where we have set the portable engine to work, and shall commence sinking to-morrow in a lode 3 ft. wide (6 fms. from surface), producing stamping work.—South Lode: There is no alteration here to notice. Since the meeting on Oct. 1 we have sold 27 tons 12 cwt. 1 qr. 3 lbs. of tin, realising 2157½, 8s. 4d.

EAST WHEAL SETON.—J. Stivens and Son, W. Thomas, Jun., Nov. 4: In Cartwright's shaft we have continued cutting through the lode, and find it 4 ft. wide, at this point we appear to have met with one of the poor floors which have been driven through in the 27 fm. level west, and there found to be dipplint east very fast. The ore driven through in the 27 has also a uniform eastern dip, so that we fully calculate on meeting with it in driving a short distance east of Cartwright's shaft, in the 34 fm. level, which we calculate on doing within a fortnight, when the lode will be fully in the shaft. In the winze under the 27 the lode is 4 ft. wide, and yielding about 5 tons of copper ore per fathom. In the 27 east the lode is 4 ft. wide, presenting a very kindly appearance, and yielding 3 tons of ore per fathom. We have commenced a winze in the 20 fathom level, in which the lode will produce 3 tons of ore per fathom. There is no change to remark on at other points.

EXCELSIOR (Tin and Copper).—John Bucknell, Nov. 3: Saturday last being our pay-day, we set to drive the deep adit level 20 fms., at 2½, 10s. per fm., or cut one of the lodes, which we do not expect for some short distance beyond that point; this will be nearly (with what has already been driven 2 fms.) about one-half the distance required to cut the great tin lode, when the two south underlie woflran lodes will form a junction with the great tin lode, this being a good underlie. At this point we anticipate great success, but prior to this we expect to cut two lodes, the backs of which must have produced quantities of tin, the stones at present being found on the surface, from these rocks being very rich for tin. We have no doubt of having a great and profitable mine here, at a very small cost.

FEDW MINE.—Nov. 2: The new engine-shaft is in good course of sinking, by nine men, and is down 4 ft. by the side of the lode struck recently. By the end of this week we shall be ready to cut down a good piece of the lode, and thus ascertain its size and value. At the old shaft, on the south vein, sinking below the 10, by nine men, the part of the lode carried is yielding 15 cwt. of lead ore per fathom, but there is much lode standing on the north and south side of the shaft. The cross-cut south, in the deep adit level, is being driven by four men, but no lode met with as yet. The surface operations in connection with the engines and crushing-mills, line of rods, bobs, &c., are very forward, and well nigh completed.

GAWTON COPPER.—G. Rowe, G. Rowe, Jun., Oct. 30: We are forcing on King's engine-shaft with all possible speed, and our progress in sinking below the 82 has been very satisfactory during the past week. The lode in the 82, east of shaft, has a very kindly appearance, and yielding 2 tons of good quality of ore per fathom. The lode in the 82 west is not quite so productive as last reported, being now worth 4 tons of ore per fathom. The lode in the 70, east of shaft, is worth 2 tons of ore per fathom. The lode in Nichol's stopes, in bottom of the 70, east of Ferrell's winze, is worth 5 tons of ore per fathom. Viant's stopes, in the back of the 70, east and west of Nichol's winze, is worth 4 tons of ore per fathom. We are busily engaged in preparing for our next sampling, which we calculate will be more than the last. Our copper ores sold on Oct. 21 weighed off 173 tons 18 cwt.

GREAT CARADON.—William Taylor, Nov. 4: I have re-set to drive the 70 west by six men; the lode is larger, and producing better stones of yellow copper ore than I have seen in the mine before, with a lot of blende, mixed with lead, altogether a very strong, kindly-looking lode, and I think will improve.

GREAT NORTH DOWNS.—Wm. Rich, W. Ennor, Nov. 3: The lode in the 94, west of Sleggan's, not being productive, we have resumed the sinking of the shaft with a full force of men; the lode in the bottom shows good indications for improvement. The lode in the 81 west carries stones of good quality. The cross-cut south of Sleggan's is still for driving; the ground is intermixed with spots of ore and mundle. The stopes in the back of the 84 west is worth 8½, per fathom. The winze in the 84, east of Sleggan's, is worth 5½, per fathom. The stopes in the back of the 84 east are worth 8½ and 6½, per fathom. The bottom of the 84, west of King's, is worth 10½, per fathom. The lode in the back of this level is worth 8½, per fathom. The lode in the back of the 84, west of King's, is worth 7½, per fathom. The winze in the bottom of the 48 is worth 5½, per fathom. The 74, west of Sleggan's, is worth 10½, per fathom. We are cross-cutting the lode in the 68, west of Vivian's shaft. The stopes in the 64, east of Butler's, is worth 8½, per fathom. The bottom of the 74 east is worth 10½, per fathom. Three stopes in the back of this level are worth 20½, per fathom in the aggregate. The 74 fm. level end, east of Butler's, is worth 8½, per fathom.

GREAT NORTH LAXBY.—R. Rowe, Oct. 28: We have taken down some of the lode in the 110 end north, and find it 4 ft. wide, composed of hard quartz, mixed with lead; there is still a great flow of water from the lode. The lode in the 96 and has begun to improve; now 2 ft. wide, with a nice mixture of ore; I think we are now close up to the new run of lead ground. The lode in the 84 end is 4 ft. wide, worth 1 ton of lead ore per fathom, and has a very favourable appearance for continuing to open out fresh ore ground. The lode in the 73 end is 2 ft. wide, worth 1½ ton of lead ore per fathom; the rise in the roof of this level is worth 15 cwt. of lead ore per fathom. The stopes in the roof of the 84 are worth about 1 ton of lead ore per fathom. I have no change to report elsewhere.

GREAT RETALLACK.—J. Harris, Nov. 4: No. 1 Lode: In the 40, south from No. 1 shaft, the lode is 2 ft. wide, composed of quartz and killas, producing 4 cwt. of lead ore per fathom. The lode in the 40, north from the shaft, the lode is 1½ ft. wide, composed of flookan and strings of lead—saving work. The lode in the 50 north is 2½ ft. wide, containing principally quartz, with occasional stones of lead, and letting out a large quantity of water.

GREAT ROCK.—John Kemp, Nov. 3: The engine-shaft is now down the required depth—12 fms. I would have put it down a little deeper, in order to prove the lode further, but the distance for drawing stuff and water makes it spare for sinking; therefore, it is my intention to square the shaft, cut roads for tramroad, and prepare for skip at once, so that we may proceed with the sinking of the shaft again, as our prospects fully warrant this, for I feel confident that we are coming down upon ore-bearing ground, for in no other part of the mine have we ever found lead so continuous as that we have now in the engine-shaft; although it has not been rich it has held for the last 7 or 8 fms. sinking without interruption, and I shall be very much disappointed if we do not get some good lead in driving our first levels. The lode in the shaft, I think, warrants me making this assertion. I hope to secure a rope and skip at the Westminster sale to-day. The rise west of deep adit level is looking better, and likely for improvement. The lode in the level, west of deep adit level, on No. 1 lode, is still poor, although the ground looks favourable. I have two men behind this end raising lode producing a little lead. The shallow adit east is looking more promising than I have ever before seen it. We have here now a well-defined hanging-wall, and the lode very heavily charged throughout with sulphur and small branches of spar. The weather is rather unfavourable for surface operations, but are doing all we can, and hope to soon be in working order.

GREAT SOUTH TOLGUS.—John Davy, Nov. 3: In the 154, west of No. 3 cross-cut, the lode is worth 8½, per fathom. In the stopes in the back of the 64, east and west of No. 2 cross-cut, the lode in each stopes is worth 14½, per fathom. In the stopes in the back of the 140, east and west of Lyle's shaft, the lode in each stopes is worth 9½, per fathom. In the 140 fathom level, east of cross-cut, the lode is worth 15½, per fathom.

GREAT WESTERN.—Edw. Rogers, Edmund Rogers, Nov. 3: Fisher's Lode: Mitchell's engine-shaft is down 2 fms. 3 ft. below the 2 ft. level; the shaftmen are engaged cutting beaver holes preparatory to fixing pitwork at this level. At the Pressure shaft we are cutting pit in the 40. In the 10, driving west of Jones's shaft, the lode is 18 in. wide, worth 2½, per fathom, and opening tribute ground. In the deep adit, west of this shaft, there is no alteration; the lode is small and unproductive. In the rise in the back of this level the lode is worth 5½, per fathom. In the 30, driving east of Annie's engine-shaft, the lode is 2 ft. wide, worth 3½, per fathom.—Middle Lode: In the 30, driving east of Curtis's shaft, the lode is 3 ft. wide, worth 7½, per fathom; in this level, driving west, the lode is 4 ft. wide, worth 6½, per fathom. In the 20, driving east, the lode is worth 8½, per fathom. No. 1 winze, in the bottom of this level, is looking better, and is communicated to the level below. The lode in No. 2 winze is 4 ft. wide, worth 7½, per fathom. In the winze in the bottom of this level, east of the shaft, the lode is 3 ft. wide, worth 12½, per fathom.—South Lode: In the rise in the back of the adit, west of White's shaft, the lode is 6 in. wide, producing a little tin.

—North Lode: In the adit level, driving east of the eastern shaft, the lode is 2½ ft. wide, worth 2½, per fathom, and opening ground that will be taken away at a profit. At surface we have fixed an additional 12 heads to the stamps, and also another boiler to the stamping engine, and are engaged excavating ground for bob-pit at the Pressure shaft. We sold yesterday to Mellanear Smelting Works 10 tons 5 cwt. 1 qr. 20 lbs. of black tin, at 68½, 10s. per ton, amounting to 703½, 11s. 10d.

GWYDYR PARK.—W. Smyth, Nov. 2: In the Gwyn Liffion deep adit and the lode is about 8 inches wide, principally composed of spar, with a little mundle and blende, also showing strange spots of lead ore; this end continues very wet. There is no particular change in the nicholas deep adit. The ground still continues spare for driving. Re-set to four men, at 8½, 5s. per fm., sten. fm.

HARWOOD.—W. Vipond, Nov. 1: The level in Mounser cross-rain continues extremely hard, and I cannot say there are yet any indications of an east and west vein; it is set to drive to six men, at 6½, per fathom.

our set, and is in the whole ground. At other places without change of notice from our last report.

ORISKANY LAKE.—F. Phillips, Nov. 3: Parker's Shaft: The men have completed the fixing of the lift, footway, &c., and are now in regular course of sinking below the 14 m. level; the ground is looking a little better; the lode is about 3 ft. wide, composed chiefly of a very beautiful spar and prair; spots of uranite copper are found occasionally—a very promising lode. In the deep adit west the ground still continues spare for progress; we have not cut into the lode yet. In the cross-cut south the ground is favourable, and good progress is being

VAN CONSOLS.—T. Corfield, Nov. 4: The cross-cut north through the lode

WHEEL TRELAUNY.—Wm. Johns, T. Grenfell, J. Pryor, Nov. 3: At Tre-
lawn's engine-shaft, in the 230, we are cutting through the leading part of the
bed, which is letting out water very freely, making it slow of progress; from what
we can see of it, it is producing stones of ore, but not rich. In the 220, north of

the shaft, and the winze sinking below the 210, these two points are going on by the side of the lode, and will be communicated shortly; this will cause a good ventilation, which is very much needed. In the 210 north the capel of the lode is presenting a much better appearance; seeing this we have placed the men to cut in the leading part of the lode at once. The stone in the bottom, in advance of this end, we are obliged to suspend in consequence of being down to water; but, however, there is no falling off in the value of the lode, worth 20s. per fm. In Smith's engine-shaft, below the 210, we are making fair progress in sinking the same, now down about 9 fathoms. In the 210, south of this shaft, as we are leaving the influence of the slide the lode seems to be improving, and in our next we hope to be able to report favourably on this point. In the 210, north of Chip-pindale's, no lode has been taken since last reported on. On the whole, we consider our tinwork department is looking more cheering.

WHEAL UNY.—S. Goad, M. Rogers, Oct. 30: We have set the engine-shaft to sink below the 150 fm. level, by eight men, at 30s. per fathom; the lode in shaft is large, and worth for the length of it 35s. per fathom. The 150 fathom level, east of engine-shaft, is driving by six men, at 7s. per fathom; the lode is of a very promising character, worth 6s. per fm. The 150 fm. level, west of engine-shaft, is driving by four men, at 7s. per fathom, worth 5s. per fathom. The 140 fm. level, east of engine-shaft, is driving by six men, at 10s. per fathom; the lode is improved, and is now worth 14s. per fathom. The 130 fm. level, east of engine-shaft, is driving by six men, at 9s. per fathom, worth 12s. per fm. Gooding's shaft is set to the 120 fm. level, and the men are now engaged in stopping for a pit, before driving the ends east of shaft. Hind's engine-shaft is sinking favourably, and is now 31 fms. from surface. The rise in the back of the 80 is up 11 fathoms. The slopes are producing the usual quantity of tin. The 140, west of engine-shaft, is holed to the 140, east of incline-shaft; and we have put four men to stop the back, at 2s. per 100 sacks.

THE CHANNEL PASSAGE.—A highly interesting discussion took place at the Society of Engineers, at which the position given to the bridge project of M. Boutet at the previous meeting, as reported in last week's Journal, was fully maintained—that it is undoubtedly the best of the numerous projects for establishing a continuous railway across the Channel. It was clearly explained that there is to be seen at Paris, and has been seen by some present, a model 66 ft. long, made to scale, which bore ten times the weight which would be required to be borne by the Channel Bridge, constructed with less than 1 ton of metal, and that this rested on two abutments of rough timber which were incapable of sustaining any great strain, and it was forcibly urged that the English engineers should make themselves acquainted with the theory by which such extraordinary results have been obtained, and study it as a novelty, instead of judging it by existing examples of bridges, and condemning it without understanding it. There is no doubt if it does not widely differ from every other bridge yet constructed it is nothing, and, therefore, existing formulae are not applicable to it. It seemed to be generally admitted that the existing spans of bridges were no criterion of what could be done, and several engineers mentioned instances of long spans which, compared with our ordinary experience, are surprising. Amongst others, it was stated that Mr. Ordish had designed a bridge with a span of $\frac{1}{2}$ mile, which Mr. Barlow had checked and approved.

NEW QUEBRADA.—In another column will be found the details of the general meeting of this promising, but hitherto unsuccessful, company. For once since its formation the various subjects brought forward were discussed in a dispassionate and sensible manner, and with an apparent resolve to give that support to the directors which their management during the past year, so concisely stated by the Chairman, entitled them. Notwithstanding the admitted value of the property, owing to a series of unfortunate events the realisation of successful results has been so long delayed that it can be readily understood all concerned are almost wearied out. But there now appears to be a more encouraging aspect, and under the direction of what appears to be a resolute, clear-headed, and business-like board, those measures which can alone save and consolidate the company have been judiciously selected, and will, it is hoped, be boldly and successfully carried out. The time has gone past for trying probable schemes; only that which is known, and which is certain ought to be adopted, and the directors deserve commendation for the bold and certain policy in pushing aside cheap and doubtful plans, and adopting that which, though more expensive, can alone successfully carry out the objects of the company. Under these circumstances, therefore, it is the obvious duty of the shareholders to support the directors, not only with their united and unanimous confidence, but when the time comes make an effort, and raise the necessary capital to carry out that policy which the board are maturing. If they do this the names of the proposed contractors are a guarantee that the railway will be well and speedily made, by which the Quebrada Company will be that which it has been always believed it would be—one of the largest and most prosperous mining companies in existence.

BWLCH CONSOLS.—From a special report recently made some further important results are confidently expected to be realised by the cutting of the north lode. There has just been sold 50 tons of lead, which realised 72s. The monthly profits are now between 200s. and 300s.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

SOUTH GREAT WORK is opening out a first-class tin mine; the lode is 8 ft. wide, worth 25s. to 30s. per fathom. I have seldom seen finer heaps of tinstuff drawn to surface.

WEST CWMYSTWTH.—The prospects here are much improved; the lode in the adit, driving east, is producing lead of first-class description, in solid ribs of from 1 to 3 in. wide, while the remainder of a lode, from 3 to 4 ft. wide, is composed of spots of lead, stones of solid blende, gossan, quartz, and sulphur, and altogether as fine a lode as can be seen at the depth. At the south part of the sett we have three lodes within a space of 40 fms., and all producing lead; a finer piece of mining ground cannot be seen in the county, and who shall say the elements are not here to guarantee as good a mine as the old Cwmystwth, which has paid on an expenditure of 7680s. profits amounting to 49,472s. in modern times, and hundreds of thousands in former times, and the workings of this old mine are within 1000 yards of West Cwmystwth.

TRELAWNY.—The prospects appear to be highly encouraging; the lode under the slide has improved, and the mine bids fair to resume its former position.

EAST SETON.—The lode will be cut in Cartwright's shaft in about a week, and, from the indications, good results are anticipated. This mine has the rich West Trelawny lode going through the entire length of the sett, and is situated in one of the best mining districts in Cornwall.

HOLMBUSH AND KELLY BRAY.—The report from these mines, in this day's Journal, together with the sale to come off of 130 tons of copper ore, and 300 tons of mende, for the month, tells its own tale, and needs no comment. It must be highly gratifying to the agents that their representations are so well justified by these returns.

EAST WHEAL LOVELL.—Capt. Wm. Pascoe, of Penven House, has forwarded the following report to Mr. Alfred Broad, of Plymouth:—"Nov. 2: The lode or deposit near the engine-shaft is very much fallen off in length, width, and value; it is scarcely anything more than 12 ft. long, and the average width for the 12 ft. about 6 ft., worth for the length (12 ft.) 500s., but is contracting every way. The western end is granite, projecting for 18 ft. from the former end of the shaft. The south wall is also underlying much faster, contracting the deposit in depth, and the eastern end is very small, and I think there is very little tin east of the end of the shaft. The western deposit is also getting smaller, and the granite is squeezing the tin; this deposit I value at 90s. per fathom, and about 9 feet long and 7 feet wide. They are carrying all the tin in the winze. In the new worksings westward they are going to put the portable engine to work to-day. The lode in the shaft is 15 in. wide, some of which is good work for tin, but in the ends the lode is small and poor. It is my opinion the lode will soon fall off very considerably."

KITTY (Lelan) continues to look well, and is now, beyond doubt, a permanent and safe investment. With the present price of tin, and larger sales, increased dividends may fairly be anticipated. The mine is one of the best managed and cheapest in Cornwall.—H. B. RYE: Nov. 5.

GREAT ROCK.—The improvement in the engine-shaft continues, and the other points are opening out in a most encouraging manner.

THE CORNISH MINE SHARE MARKET.—Only a moderate amount of business has been reported during the week, and, with one or two prominent exceptions, the quotations of most of the mines—tin, copper, and lead—have exhibited scarcely any alteration since last week. No doubt the rather dull condition of the foreign tin market apparent the last few days, and the interference of the business of the settling, have been the main reasons for restricted dealings in the share market.

It was stated some weeks since that Capt. Teague, of Tincroft, had purchased Great Wheal Prosper sett and materials for the sum of 7075s. We cannot learn that a company has been formed to work the sett, and they are now pulling up the pumps to the 40 fm. level, and intend, we hear, to work the shallow level in connection with Owen Vean, Tegurtha Downs, and other mines. Atmospheric Stamps have been tried at Hayle during the week (they appear to be identical with those introduced some two or three years since by Mr. A. B. Childs, of Mark-lane, and described in the Mining Journal at the time), and worked satisfactorily. The patentees state that they will reduce the cost of coal for stamping purposes one half; that they will give 150 blows per minute, against the present speed of 45; and that they have already succeeded in America beyond the most sanguine expectations. We trust they will now have a practical trial, and be found all that the Messrs. Harvey and the patentees could desire.

The new tin smelting company which has recently been referred to is to be formed out of the Biscoe Company. The Biscoe Tin Smelting Company, consisting of Messrs. J. S. Tregoning (of Liverpool), W. H. Tregoning (of Tre-

varth, Gwennap), R. M. Sampson (of Devoran), H. Williams (of Alma), and Messrs. James and Shakspeare (of London), will shortly be dissolved by effluxion of time, and that the London partners (Messrs. James and Shakspeare), in conjunction with Mr. Edward Michell, of the firm of Messrs. Robert Michell and Son, Truro, will then commence operations, under the style of "The Penpoll Tin Smelting Company," to which reference has been previously made in our columns.—West Briton.

With this day's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: Improvements in Blast-Furnaces (Fletcher, Solly, and Urwick); Notes on Coal Mining in Monmouthshire (M. B. Gardner); Safety-Lamp Experiments (W. Hann and Son); Assay of Silver Ores (T. L. Phipson); Nova Scotia Gold Fields; Iron Mines in Austria (J. W. Wilkins); Real del Monte Mining Company (H. Sewell); Mining in Sweden (W. Hoskin); Tin and Copper Lodes of Cornwall (A. Bennett); Mining in the North of Cornwall, No. 1; Silver Mining in Cornwall; Old Treburtet Mining Company (W. W. Philp); West Caradon, and its Management; Mining in the Tavistock District—Foreign Mining and Metallurgy—Foreign Mines Reports—Australian Mines Reports, &c.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, NOV. 5, 1869.

COPPER.				IRON.			
Best selected..	per ton	£	s. d.	Per ton.			
Tough cake and tile	73	0	0-74 0 0	Bars Welsh, in London	7	0	0-7 5 0
Sheeting & sheets	77	0	0-78 0 0	Ditto, to arrive	7	0	0-7 5 0
Boils	78	0	0-78 0 0	Nail rods	7	2	6-7 5 0
Bottoms	81	0	0-82 0 0	Staffs, in London	8	10	0-9 0 0
Old (Exchange)	65	0	0-65 0 0	Bars ditto	8	7	6-9 0 0
Burra Burra	76	0	0-77 0 0	Hoops ditto	9	0	0-10 15 0
Wire	10	0	0-11 0 10 1/2	Sheets, single	10	0	0-12 0 0
Tubes	0	0	0-11 1/2-1 0	Pig No. 1, in Wales	3	15	0-4 5 0
BRASS.				Refined metal, ditto <td>4</td> <td>0</td> <td>0-5 0 0</td>	4	0	0-5 0 0
Per lb.				Bars, common ditto <td>6</td> <td>0</td> <td>0-6 5 0</td>	6	0	0-6 5 0
Sheets	9d.			Do. mch. Tyneor Tees	6	10	0-6 5 0
Wire	8d.			Do., railway, in Wales	7	0	0-7 10 0
Tubes	10 1/2d.			Do., Swed., in London	10	0	0-10 5 0
YELLOW METAL SHEATH. p. lb. 63d.-7d.				To arrive	10	5	0-10 5 0
Sheets <th></th> <th></th> <th></th> <td>Pig No. 1, in Clyde</td> <td>2</td> <td>13</td> <td>3-3 1 6</td>				Pig No. 1, in Clyde	2	13	3-3 1 6
Per ton.				Do. L.C.B. Tyneor Tees	2	9	6-6 5 0
Foreign on the spot	£19 10	0-19 15 0		Do. Nos. 3, 4, L.C.B. do	2	6	2-7 0 0
" to arrive	19 10	0-19 15 0		Railway chairs	5	10	0-5 15 0
ZINC.				" spikes	11	0	0-12 0 0
Per ton.				Indian Charcoal Pigs,	6	0	0-6 10 0
In sheets	£26 0 0			In London, p. ton	6	0	0-6 10 0
TIN.				STEEL.	Per ton.		
Per box.				Swed., in kegs (rolled)	14	0	0-15 0 0
English blocks	123	0	0	" (hammered)	14	15	0-15 5 0
Do., bare (in brls.)	124	0	0	Ditto, in faggots	15	15	0-16 0 0
Do., refined	130	0	0	English, spring	19	0	0-23 0 0
Banca	125	0	0	QUICKSILVER (p. bottle)			
Straits	123	0	0	6	17	0	0
TIN-PLATES.*				LEAD.	Per ton.		
Per box.				English Pig, com.	19	0	0-19 0 0
IX Charcoal, 1st qua.	1 6	0-1 8 0		Ditto, L.B.	19	5	0-19 5 0
IC Ditto, 1st quality	1 12	0-1 14 0		Ditto, W.B.	20	0	0-20 0 0
IC Ditto, 2d quality	1 4	0-1 6 0		Ditto, sheet	19	10	0-19 10 0
IX Ditto, 2d quality	1 10	0-1 12 0		Ditto, red lead	20	0	0-20 10 0
IC Coke	1 2	6-1 3 0		Ditto, white	27	0	0-30 0 0
IX Coke	1 8	6-1 9 0		Ditto, patent shot	22	0	0-22 0 0
Canada plates, p. ton	13	10	0-13 10 0	" Spanish	18	5	0-18 5 0
Ditto, at works	12	10	0-12 10 0				

* At the works, 1s. to 1s. 6d. per box less.

* At the works, 1s. to 1s. 6d. per box less.

REMARKS.—The Metal Market remains in the same state of inactivity which has characterised it for some weeks past, and at present there does not appear to be any signs of improvement, and we fear that the movement of the directors of the Bank of England, at their weekly meeting, on Thursday, in raising the rate of discount to 3 per cent. will not have the effect of making matters better, as, although there is not now any speculation in the market, yet in its present state the least unfavourable circumstance is calculated to act prejudicially upon it, and such a step as the advance of the Bank minimum, although only $\frac{1}{2}$ per cent., is sure to have this tendency; and we, therefore, exceedingly regret that this step has been deemed necessary by the directors of the Bank. The accounts received from India during the week have been of a varied character. From one part it is stated that the same unsatisfactory state of things continues in the market there, and that there has been no revival in the demand, and, at the time of year when there is usually considerable activity, the trade is remarkable for excessive dullness and stagnation. From another part, however, it is said that the intelligence is more favourable, and the heavy rains which had occurred having ceased the feeling has undergone a decided improvement; and, as advices from the up-country were still favourable, a good general demand may be looked for during the season now opening. We trust the latter report may be the correct one, and that it will be found that a better business will soon be done with India than has been the case for some time past. Prices have undergone but little change during the week, except in iron, in which the demands made by the men for an increase of wages, and the concessions made by the masters, have led to an advance in prices being announced.

COPPER.—The market for this metal has undergone no change during the week, and the amount of business transacted still continues very limited. The quotation for Chili bar is somewhat lower, being now 67s. to 67 1/2s. cash. Ore remains at 13s. 3d. per unit.

IRON.—Another Special Meeting of the South Staffordshire Ironmasters was held at Birmingham, on Thursday. This was rendered necessary by the continued demands of the workmen for an advance of wages, and their threats to strike if the demand was not complied with. There was a very animated discussion at the meeting, and considerable difference of opinion was expressed. Ultimately, however, it was resolved that the price of manufactured iron be advanced 20s. per ton; and as to wages, that those of the puddlers be advanced to 8s. 6d. per ton (a rise of 1s.); the millmen and others to have a rise of 10 per cent. This advance is to date from Nov. 1. It is now stated that the trade is decidedly better, and there is an increased demand for finished iron. It is to be presumed that the difficulty with the workmen will now pass over. In Welsh it was not expected that the advance granted to the puddlers in Staffordshire would cause any difficulty in this district, as the men are paid upon a different scale; but now that a general advance has been decided upon, it is most likely that the workmen in Wales will demand an advance also. There is no want of employment at the rail-mills, and makers pay but little attention to the other branches of the trade, in consequence of the more remunerative prices obtained for rails. American shipments of rails continue on a tolerably large scale, and early next spring a large Russian trade is looked forward to. In Swedish iron the enquiry is not now quite so good. In Scotch pig-iron a moderate business has been done during the week, and prices have rather advanced, the last received from Glasgow being 53s. 4 1/2d. cash, and 53s. 7 1/2d. one month.

LEAD.—A steady business continues to be done, and prices remain tolerably firm at the quotations.

TIN.—The market for foreign has remained inactive, and only a limited number of transactions have occurred. Straits, to a small extent, has been sold at 123s. cash. In Holland, the stock of Banca, on warrants, on Oct. 31, was 110,617 slabs, against 140,759 slabs same time last year, and the arrivals towards next sale were 28,716 slabs, against 44,010 slabs same time last year.

SPELTHER.—No improvement has yet occurred in this metal. The price nominally for parcels on the spot is still 19 1/2s. to 19 1/2s. The stock in London, on Oct. 31, was 1163 tons, being a decrease of 321 tons during the month.

TIN-PLATE.—Dullness characterises the trade, the purchases made by American houses being comparatively small.

STEEL AND QUICKSILVER without any change whatever.

THE IRON TRADE (Griffiths' Weekly Report).—At a special meeting of the Association, held at the Birmingham Exchange, on Thursday, the masters passed a resolution to advance the price of bars 1s. per ton; puddlers 1s. per ton, making 8s. 6d.; shinglers and millmen 10 per cent., which settles the wages question for the present. The advanced price, both on iron and wages, commences the first of this month. No doubt the Association well considered the subject. We are not prepared to say whether the result will justify the masters in the step they have taken; we must conjecture this from the probable methods they have adopted to obtain the advance, knowing, as we do, that the puddlers did not previously get sufficient money to keep their wives and children properly fed. A puddler cannot do his work without being well fed, and

the men have to thank the Earl of Dudley and the Patent Shaft Company for the success which has attended their proper efforts to obtain advanced wages. We have no change to notice in the market here. Buyers are numerous, and some business has been done in marked bars at an advance of 1s. per ton. Buyers of rails for spring delivery are eager, and will, no doubt, pay the advance readily. The market for tin-plates continues flat and inanimate.—Old Broad-street, London, Nov. 6.

THE TIN TRADE.—Messrs. L. Th. van Houten (Rotterdam) write—Trading Company's public sale of 61,633 slabs of Banca and 1094 slabs of Billiton tin was held here on Oct. 1, and it went off much lower than was anticipated, 74 1/2s. being paid for the former, and 74 1/2s. to 74 3/4s. for the latter. This price, being considered very moderate, immediately attracted general attention, and considerable quantities were taken on speculation and for consumption, English operators especially buying very freely; but the market closes with little animation, 73 1/2s. being the nominal quotation. For delivery ex next spring sale not much has been done. Some "bear sales" have been made as low as 67s. We now quote 68 1/2s. fl., but the demand is exceedingly limited. Some parcels of Billiton tin were sold during this month at 73 1/2s. fl., with 14d. prompt, and one or two floating parcels ex August sale, at 71 1/2s. fl. The result of the public sale of 5000 pencils, held in Batavia in the first days of this month, is not yet known, but it is expected that high prices will have been paid, on account of the existing demand for China. The deliveries of tin in Holland during this month have been very satisfactory, viz., 21,964 slabs of Banca and 400 slabs of Billiton, and large deliveries are also expected to take place during the coming month, as a considerable quantity must still be shipped before the expiration of the sales' prompt. The position of Banca tin in Holland on Oct. 30, according to the official returns of the Dutch Trading Company, was:—

Import in October	Slabs	1869.	1868.
Total ten months	95,829	109,546	17,724
Deliveries in October	21,964	14,720	14,950
Total ten months	96,536	113,037	99,893
Stock second-hand	110,617	140,759	173,046
Total stock	140,566	180,969	192,024
Stock of Billiton	12,844	6,228	10,772
Import in October	2,500	10,830	—
Delivered and shipped in October	—	400	10,811
Quotation { Banca	73 fl.	59 1/2 fl.	59 1/2 fl.
Oct. 30 { Billiton	72 fl.	58 1/2 fl.	58 1/2 fl.

These returns, compared with those of 1868, exhibit an increase of the import for October of 179 tons, a decrease of the import for the ten months of 429 tons, an increase of the deliveries for October of 226 tons, a decrease of the deliveries for the ten months of 516 tons, a decrease of the stock second-hand of 942 tons, a decrease of the unsold stock of 321 tons, a decrease of the total stock of 1263 tons, an advance of the quotation of Banca of 23s. 18s. per ton. The quantity of Banca tin now afloat for the Dutch Trading Company is 18,100 pencils, equal to 1131 tons, against 2300 pencils, equal to 1440 tons last year. We estimate the quantity of Billiton tin now afloat at 5392 pencils, equal to 337 tons.

The Government returns for the month of August are as follows:—

		EXPORT OF TIN FROM HOLLAND.		August.		Eight months.	
		1869.	1868.	1869.	1868.	1869.	1868.
Germany	..Tons	181	275	230	1237	1540	1542
England	..	55	52	53	413	381	166
Belgium	..	209	160	159	1154	1223	924
France	..	5	16	21	65	176	166
Hamburg	..	19	103	11	138	293	133
United States	..	19	103	11	138	293	133
Other countries	..	19	103	11	138	293	133
Total	..Tons	472	606	492	3025	3667	2958

THE COPPER TRADE.—Messrs. J. Pitcairn-Campbell and Co.—There has been more doing in Chili bar copper during the fortnight, owing to more favourable advices from the West Coast, whence estimates of the year's shipments are being reduced. English smelters have more freely met the market for manufactured at a reduction of 1s. per ton for India sheets, and ores and prices continue dull. Both the Cornish and Swansea standards are lower, the prices realised for the best ores at the latter sale being 13s. 3d., and the average price 12s. 11d. The imports into Liverpool and Swansea during the nine months ending Sept. 30 have been from all quarters:—

ending Sept. 30. Ores. Regulus. Barilla. Slab. Fine copper.					
Tons	43,524	28,385	2222	18,819	41,568
Against	37,806	54,000	1,000	1,868	55,664

1867. Business transacted during the fortnight comprises on the spot here 822 tons bars, at 67 1/2s. 6d. to 67 1/2s. 10s.; and 250 tons ingots, at 71 1/2s. to 71 1/2s. To arrive here, 290 tons bars, at 67 1/2s. 10s. to 68 1/2s. 10s. On the spot at Swansea, 218 tons bars at 67 1/2s. to 67 1/2s. 10s.; 30 tons ingots, at 72s.; and 590 tons regulus at 13s. 3d. Quotations are 67 1/2s. for Chili bars, 13s. 3d. for ores and regulus, 71 1/2s. for Urmeneta ingots, and 14s. 6d. for Corocoro barilla. Arrivals here during the fortnight from West Coast, S.A.—St. Bernard, from Coquimbo, 189 tons bars; Compadre, from Coquimbo, 886 tons regulus, 18 tons bars; Araucania, from Valparaiso, 330 tons barilla; American, from Colon, 25 tons ore. At Swansea, Henry Ranking, from Carrizal, 490 tons regulus; Florence Danvers, from Bolivia, 300 tons ore, 450 tons regulus; Emily Waters, from Guayaquil, 575 tons bars, 132 tons ingots; Mira Flores, from Bolivia, 735 tons ore, 20 tons barilla; Antonia Vinent, from Carrizal, 645 tons regulus. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, are:—

	Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool	1125	2926	8611	1850	120
Swansea	3664	5323	1181	458	242
Total	4789	8249	9792	1808	362

Representing about 16,500 tons fine copper; against 12,200 tons Oct. 30, 1869; against 8700 tons Oct. 30, 1867; against 10,400 tons Oct. 30, 1866.

Messrs. Henry Rogers, Sons, and Co.—COPPER. The business of the week has not been on a large scale; bars have been sold at 67 1/2s. for good brands in small quantities; no transactions in ores are reported. English and Australian are both firmer, the former has been sold at 72 1/2s. for ingots. The smelters ask 1s. per ton advance.—SPELTHER: A large business has been done in Rhineland and English. In the former 18 1/2s. to 19 1/2s. has been about the price, spot and outputs, while English fetched 19 1/2s. only, delivered in the Midlands Counties. An offer to sell 1000 tons of Rhineland in Paris at equal 18 1/2s. here did

are firmer. P. G. best English soft pig lead, 187. 15s.—Spelter: Dull. English, 20s. 10s. to 21s.; Silurian, special brands, 20s. 5s. to 20s. 10s.; Hard spelter, for export, 16s. 5s. to 16s. 10s.—Ellis's Chambers, King-street, Manchester, Nov. 4.

The MINING SHARE MARKET this week has been moderately active, and there have been great fluctuations in one or two mines, particularly in East Lovell and East Seton. In Prince of Wales there has been a good deal doing, at an advance; and also a fair amount of business in West Chiverton, Marke Valley, Great Laxey, West Caradon, Bronfloyd, East Caradon, West Maria, Ding Dong, Cargoll, New Lovell, and a few others. The standard for copper ore advanced 17. 12s. per ton on Thursday. Prince of Wales rose early in the week to 24s., 25s., and after a good amount of business leave off at 23s. to 25s.; in the 77 cross-cut south, towards the lode, a branch has been cut worth 57. per fm.; of the ore just sampled 50 tons has an average produce of 14 1/2 per cent., being the richest parcel ever produced by the mine. East Lovell shares have declined 57. to 67. each, and leave off 15 1/2 to 16 1/2; this mine is said to have fallen off, but we have no official information. East Wheel Seton, after advancing to 43, declined to 3 1/2 early in the week, and leave off 2 1/2 (call paid); at the meeting, the accounts showed a balance of liabilities over assets of 16487. 18s. 9d., and a call of 3s. per share was made; the lode is expected to be seen in Cartwright's shaft in about 6 ft. further sinking; a winze opposite the 27 cross-cut, down 4 ft., is worth 6 1/2 tons of copper ore per fm.; a cross-cut driven south from Cartwright's shaft, in the 20 fm. level, has intersected the lode, worth 2 1/2 tons per fathom; the prospects of the mine are favourable, and there are now 40 tons of copper ore broken and being prepared for market. West Chiverton, 55 to 56; the 120, east of Hawke's, is worth 157. per fm., and the west end 507. per fm.; the 110, west of Batters', on the south lode, 407. per fm.; the 110 west, on middle lode, 307. per fm.; the 110 west, on north lode, 207.; the 110 east, on middle lode, 307.; the 110 east, on north lode, 207.; the 100 west, on north lode, 207. per fm. Gunnislake (Clitter's), 25s. to 30s.; the accounts presented to the late meeting showed a balance in favour of the mine of 8377. 2s.; the copper ore sold during the four months realised 13547.; the agents report that the mine is steadily improving, and, while they cannot recommend the returns to exceed those of the past few months, they think it right to state the reserves will be considerably increased. Frank Mills, 3 1/2 to 3 3/4; at the meeting, a dividend of 4s. per share was declared; the profit on the quarter was 10297.; balance of assets over liabilities, 31967.

Redmoor, 16s. to 18s.; at the meeting the accounts showed a balance of assets over liabilities of 474s. 7d., and a call of 1s. per share was made. The report states that the 25 fm. level has been driven 26 fms. west, through a course of tin varying from 107. to 277. per fathom; present end worth 207. per fathom. The steam-stamps are at work, and early in December about 6 tons of tin will be sold. The agent adds, that as soon as the floors and burning-houses are complete, about the middle of December, this will be a paying mine. North Croft, 1 1/2 to 2; at the meeting held on the 30th ult. the accounts showed a profit of 887. 1s. 6d., and a balance in hand of 3437. 10s. 2d. The most encouraging feature in this mine at present is the run of mineral ground, producing copper and tin, to the west of Petherick's shaft. This has been driven through in the 196 for a length of about 20 fms., and the 208 fm. level is now entering it. It is, therefore, hoped the 196, 208, and deeper levels may open out profitable ground. At South Frances meeting the accounts showed a balance against the mine of 20637. 6s. 8d., and the profit on two months' working 77. 19s. 8d. The mine is looking poor. Bedford Consols, 2 1/2 to 3; Bedford United, 27s. 6d. to 32s. 6d.; Caldbeck Fells, 30s. to 32s. 6d.; Chiverton Moor, 3 1/2 to 3 3/4; Chontales Gold, 14s. to 16s.; Devon Great Consols, 11s. to 12s.; Ding Dong, 24 to 25; Drake Walls, 18s. to 19s.; Don Pedro del Rey, 4 to 4 1/2; East Gunnislake, 37s. 6d. to 42s. 6d.; Frontino and Bolivia, 21s. to 23s.; Great Laxey, 19 to 20; Great North Laxey, 17s. to 19s.; Great Wheel Vor, 14 1/2 to 15; Marke Valley, 6 1/2 to 7; Mineral Bottom, 4 to 4 1/2; Mining Association, 15s. to 17s. 6d.; New Lovell, 35s. to 37s. 6d.; North Treskerby, 10s. to 12s.; Okel Tor, 9s. to 11s.; Princess of Wales, 5s. to 7s. 6d.; Providence Mines, 37 to 39; Rosewall Hill and Ransom, 10s. to 12s. 6d.; South Condurrow, 36s. to 38s.; Spearu Moor, 19 to 20; Tincroft, 17 1/2 to 18 1/2; Van, 37 1/2 to 38 1/2; Yudanamutana, 1 1/2 to 1 3/4; the advices are considered favourable, and a new lode cut, yielding good ore, and in whole ground; the ores raised in the month was 419 tons, copper smelted 43 tons 13 cwt. Australian United, 3 to 3 1/2; Anglo-Australian, 1 1/2 to 1 3/4 prem.; Van Consols, 1 1/2 to 2; West Caradon, 8 1/2 to 9 1/2; West Frances, 43 to 44; West Maria and Fortescue, 27s. to 29s.; West Seton, 180 to 185; Wheel Chiverton, 3 1/2 to 3 3/4; Wheel Grenville, 35s. to 40s.; Wheel Kitty (St. Agnes), 5 to 5 1/2; Wheel Margaret, 11 1/2 to 12 1/2; Wheel Mary Ann, 16 to 18; Wheel Setons have declined to 32 3/4; Wheel Uny, 3 1/2 to 4; East Caradons advanced on Friday from 53 1/2 to 63 1/2.

During the week the Mining Market on the Stock Exchange has been dull, and transactions very restricted, the holidays having in some measure interfered with the progress of business. In most cases there has been no change in prices current last week. The exceptions are a slight fall in Don Pedro and Yudanamutana, while Rossa Grande shares are a little better. The following are the closing quotations:—Chontales, 11-16ths to 13-16ths; Frontino, 21s. to 23s.; Don Pedro, 3 1/2 to 3 3/4; St. John del Rey, 17 to 17 1/2; Anglo-Argentine, 1 1/2 to 1 3/4; Anglo-Brazilian, 1 1/2 to 1 3/4; General Brazilian, 1 1/2 to 1 3/4; Pestarena, 1 1/2 to 1 3/4; Port Phillip, 1 1/2 to 1 3/4; Rossa Grande, 1-16th to 3-16ths prem.; Taguairil, 3s. to 4s. prem., in demand; Yudanamutana, 1-16th to 1 1/2-16ths. In British description the fluctuations have in some cases been very wide. East Lovell shares are especially heavy, having declined to 15. It is understood that this decline is attributable to a falling off of the lode, there being, however, still a fine course of tin. East Seton and Great Vor shares have also been flat, while East Caradon, Great Laxey, and Van shares have been firm; the latter (a report of which will be seen in another column) are especially so. The mine has greatly improved since the last report, and the most sanguine could not have expected that it would open out as it has done. A report received during the week speaks of the 15 fm. level, west of the engine-shaft, as very rich ore ground, and in a great measure clear of blende. It is impossible at present to fully estimate the value of this portion of the mine. Apparently, it will become its richest portion. The following are the closing prices:—Van, 38 to 39; West Chiverton, 56 to 57; Great Vor, 14 1/2 to 15; East Lovell, 15 1/2 to 16 1/2; East Seton, 2 to 2 1/2; Hingston Down, 1 to 1 1/2; East Caradon, 5 1/2 to 6; West Caradon, 8 to 9; Marke Valley, 6 1/2 to 7; Great Laxey, 19 to 19 1/2; Prince of Wales, 23s. to 25s.; these shares have improved. Great Rock, 8 to 8 1/2.

At Redruth Ticketing, on Thursday, 1356 tons of ore were sold, realising 58257. 1s. 6d. The particulars of the sale were—Average standard, 97. 13s.; average produce, 7 1/2; average price per ton, 47. 6s.; quantity of fine copper, 97 tons 17 cwt. The following are the particulars of the sales during the past month:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
Oct. 7	2188	96 16 0	7 1/2	24 5 0	11s. 9d.	258 16 0
" 14	1081	96 16 0	7 1/2	3 15 0	11 5	57 10 0
" 21	2719	103 1 0	6 1/2	3 16 0	11 11	59 14 0
" 28	1994	92 11 0	8 1/2	5 0 6	11 11 1/2	59 16 0
Nov. 4	1356	97 13 0	7 1/2	4 6 0	11 11	59 10 6

Compared with last week's sale, the advance has been in the standard 17. 12s., and in the price per ton of ore about 2s. 4d. Compared with the corresponding sale of last month, the advance has been in the standard 15s., and in the price per ton of ore about 1s.

At Cargoll Mine meeting, on Tuesday, the accounts for the three months ending June showed a credit balance of 7727. 2s. 9d. The report of the agents concluded by stating that they thought from present appearances the time is not far distant when they may resume their dividends.

At the United Mexican Mining Company meeting, on Wednesday (Mr. Charles Morris in the chair), the report of the directors and balance-sheet were received and adopted. Details in another column.

At the Vancouver Coal Mining and Land Company meeting, yesterday (the Hon. Mr. Fitzwilliam, M.P., in the chair), the report of the directors and balance-sheet were received and adopted, and a dividend at the rate of 15 per cent. per annum was declared. Details in another column.

COAL MARKET.—The stormy weather and adverse winds have checked the supply this week very materially, only 56 ships having come forward. The demand for house coals has been active at an advance of 6d. to 1s. per ton. Hartleys steady at previous value.

Haswell Wallsend, 22s.; Hetton Wallsend, 22s.; Hetton Lyons Wallsend, 19s. 6d.; Tunstall Wallsend, 19s. 6d. Unsold, nil; 10 ships at sea.

The Bank of England return for the week ending on Wednesday evening showed in the ISSUE DEPARTMENT a decrease in the "notes issued" of 219,3257., which is represented by a corresponding decrease in the "coin and bullion" on the other side of the account. In the BANKING DEPARTMENT there is shown a decrease in the "public deposits" of 115,3207., in the "other deposits" of 234,1877., and in the "rest" of 94817., together 378,9817.; and an increase in the "seven day and other bills" of 55,1147.=323,8177. On the asset side of the account there was a decrease in the "Government securities" of 500,0007., and an increase in the "other securities" of 573,8417.=373,8417., making a total decrease in the reserve of 697,6887.

A petition for winding-up the North Wales Slate Supply Company (Limited) is to be heard before Vice-Chancellor James on Nov. 13.

THE VAN.—By the report of the manager, which appears in another column, it will be seen that since the date of last report the mine has materially improved at some of the most important points of operation. During the month the dressing-floors have been considerably extended. The sampling on Monday will be 250 tons of lead and 100 tons of blende.

TO BROKERS.

WANTED, A GENTLEMAN, TO INTRODUCE CAPITALISTS with a FEW THOUSANDS, on liberal terms, to complete a project on which £15,000 have been spent. Satisfactory information and full explanations will be given on application to Mr. J. CALDECOTT, Agent, No. 19, Pepper-street, Chester.

IMPERIAL OTTOMAN MINING COMPANY (LIMITED).

WANTED, A MINING CAPTAIN, with a thorough practical experience in Lead Mining, to proceed to this COMPANY'S MINES at PELIDLI, twenty-five miles from CONSTANTINOPLE, and UNDERTAKE the MANAGEMENT. The climate is unexceptionable. None need apply whose character and qualifications will not bear the strictest investigation. Address, stating terms, &c., "The Secretary," at the company's offices, 46, Moorgate-street, London, E.C.

TO TIN DRESSERS.

WANTED, AN EXPERIENCED TIN DRESSER, who is THOROUGHLY ACQUAINTED with LAYING OUT TIN FLOORS, on the most modern principles. Apply, with testimonials, to WILLIAM WARD, Esq., 95, Bishopsgate-street, London; or to Captain RICHARD REYNOLDS, Royalton Mines, Roche, near St. Austell.

WANTED, A MANAGER, to proceed forthwith to a SOUTH AMERICAN GOLD MINE. Good climate. None but men with the highest references, and thoroughly acquainted with the reduction of gold ore, need apply. Address, "A. Z.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

WANTED, FOR EAST WHEEL BASSET, AN EFFICIENT MINE AGENT, who will have the sole charge of the workings. The committee will meet on the mine at 1.30 P.M. on Wednesday, the 10th instant. Applicants are requested to attend there and there, with their testimonials. Dated East Wheel Basset, Redruth, 2d November, 1869.

WANTED, AN OVERMAN'S SITUATION IN LEAD WORKS. Has had FIFTEEN YEARS' PRACTICAL EXPERIENCE in one of the largest manufactories in the North of England. Can keep accounts, and can also be well recommended. Letters to be addressed to "M. R.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

WANTED, A GENERAL MANAGER IN A CHEMICAL WORKS, producing soda ash, caustic soda, bi-carbonate, bleaching powder, &c. An experienced practical man will be treated liberally. Also, a YOUNG MAN, competent to TAKE CHARGE of a LABORATORY. Apply, by letter, with references, to "A. X. Z.," 26, Brunswick-buildings, Liverpool.

RAILS.

WANTED, immediately, FORTY TONS OF TEMPORARY CONTRACTORS' RAILS, in GOOD CONDITION, from 30 to 42 lbs. per yard. Apply to Mr. SMITH, Wern House, Neath, South Wales.

TO PROMOTERS OF PUBLIC COMPANIES, &c.

THE ADVERTISER holds a VALUABLE TRACT OF MINERAL LAND, including MINES containing SEVENTY PER CENT. COPPER, and TEN PER CENT. GOLD. He wishes to MEET with RESPECTABLE PARTIES to FORM a COMPANY. The property is situated near a sea port, and a railway is just being completed in the district. For particulars, address, "South America," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

A GENTLEMAN, who has the call at a low price of a LARGE NUMBER OF SHARES in a very PROSPEROUS CONCERN, now standing at a considerable premium, and must inevitably be much higher, is desirous of MEETING a GENTLEMAN of EXTENSIVE CONNECTION to co-operate with him in the transaction. Money not required. Apply to Mr. GEORGE DAVIES, 12, North Buildings, Finsbury, E.C.

A GENTLEMAN, for many years practically engaged in Mining, Smelting, &c., SEEKS an APPOINTMENT as MANAGER OF MINES or METALLURGICAL WORKS. Is also well versed in assaying, analysis, and the wet process for the extraction of copper. Speaks French. Apply, by letter, to "M. E.," MINING JOURNAL Office, No. 26, Fleet-street, London, E.C.

A GENTLEMAN, who is engaged in WORKING a COAL and IRONSTONE MINE, REQUIRES a PARTNER. The fullest information given. Capital required, £500. Principals or their solicitors negotiated with. Apply, in the first instance, to THOS. SHERRATT, Solicitor, Talk-on-the-Hill.

TO COLLIERY OWNERS, AND OTHERS.

A SITUATION IS WANTED BY ONE who has had TWENTY YEARS' EXPERIENCE as a MINERAL SURVEYOR and COLLIERY MANAGER at important collieries in the counties of Durham, Glamorgan, and Lancashire. Good references given. Address, "M. B.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

TO COALMASTERS AND IRONMASTERS.

TO BE SOLD, OR LET ON ROYALTY, the MINE of COAL under about FIFTY ACRES of LAND adjoining a railway. For particulars, apply to Mr. G. DAVIDSON, Mawley, Clebury Mortimer, Salop.

FIRE-CLAY OF A SUPERIOR QUALITY. Has been subjected to the SEVEREST TESTS, and STANDS THE HEAT equal to, if not better than, ANY CLAY YET DISCOVERED. For further particulars, apply to Mr. JOHN SHALLCROSS, 23, York-street, Leek, Staffordshire.

OLD TREBURGETT MINE.—WANTED TO PURCHASE, a 60-inch STEAM ENGINE, and BOILERS. Apply to the Secretary of the Company, Mr. TILLY, 1, Circus-place, E.C.

CALDBECK MINES, CUMBERLAND.—PARTIES wishing for CORRECT and RELIABLE INFORMATION as to the PRESENT and FUTURE PROSPECTS of the MINES of this DISTRICT, can obtain the same by applying to "H. B. V.," a Cornish miner, Post Office, Caldbeck, near Wigton, Cumberland.

THE GIEW CONSOLIDATED MINES,

In the parishes of

TOWENACK AND UNY LELANT, CORNWALL.

Application for whole shares (48ths), half shares (96ths), or quarter shares (192ths), to be made to Mr. T. TREWEKE, Jun., Uny Lelant, Hayle, Cornwall. October 27th, 1869.

N.B.—A few shares only unappropriated. No call will be made until after the share list is completed.

MR. THOMAS TREWEKE, JUN., UNY LELANT, HAYLE, CORNWALL, GENERAL MERCHANT.

MR. TREWEKE has always ON SALE PUMPING ENGINES, WINDING ENGINES, STAMPING ENGINES, and every other description of materials used in a mine, both new and second-hand, of the very best quality and manufacture, and upon the easiest terms.—Nov. 4, 1869.

THE EXCELSIOR TIN AND COPPER MINE, NEAR CALLINGTON.

Nov. 4.—Saturday last being our pay and settling-day, several of the local shareholders attended, and were much pleased at the progress being made, as well as the unusually good prospects of the mine. Several mining agents present, after examining the staff near the surface, gave evidence of their good opinion of the mine by taking shares. Twenty fathoms of adit was set for driving at 22 10s. per fathom; this, it is expected, will be completed by Jan. 1, 1870, and will be then, it is believed, very near one of the main lodes of the district. Persons desirous of obtaining shares are requested to make application to the secretary of the company, W. WARD, Esq., 95, Bishopsgate-street, London.

LABORATORY OF ANALYTICAL CHEMISTRY,—4, THE CEDARS, PUTNEY, LONDON, S.W.

ANALYSES and REPORTS on METALLIC ORES, METALS, &c., daily attended to by Dr. T. L. PHIPSON, F.R.S., Member of the Chemical Society of Paris, &c. Terms moderate.

THE TAN-YR-ALLT MINING COMPANY (LIMITED).—Notice is hereby given, that the FIRST ORDINARY GENERAL MEETING of the Shareholders of the Tan-yr-Allt Mining Company (Limited) will be HELD at the London Tavern, Bishopsgate-street, London, on SATURDAY, the 13th day of November, 1869, at Twelve o'clock at noon precisely.

And Notice is hereby further given, that at the conclusion of the business of such Ordinary General Meeting, an EXTRAORDINARY GENERAL MEETING of the shareholders will be held at the place aforesaid, for the purpose of considering, and if approved, of passing a Special Resolution, making the following alteration in the company's Articles of Association, namely:—

In Article 81, line 2, by striking out the words "and all" to the end of the Article.

By Order, F. HODGSON, Jun., Secretary.

NOTE.—The Transfer Books of the company will be closed from the 7th to the 13th day of November, 1869, both days inclusive.

CAPTAIN ABSALOM FRANCIS, GOGINAN, ABERYSTWYTH, MINING AGENT, ENGINEER, AND SURVEYOR.

The great success which is attending the opening and working of the Mines in the counties of Cardigan and Montgomery, and the many properties placed at the disposal of Capt. ABSALOM FRANCIS, induces him to offer his services, either to ADVISE, INSPECT, REPORT, or SURVEY, for Mining Companies or private shareholders. For terms, apply to Capt. ABSALOM FRANCIS, as above.

INVESTMENTS IN LEAD MINES.—THE DIVIDENDS paid by LEAD MINES for the year have DOUBLED in AMOUNT in the last ten years, and are likely to continue to increase. Some of the young lead mines will probably become profitable, and rise greatly in value in a short time. Full particulars, with a MAP of the Cardiganshire and Montgomeryshire districts (including Van, Dyffke, Plynlimmon, East Darren, South Darren, Llanbarn, Cwmystwith, Cefn Brynau, and other mines), can be obtained (price 1s.) on application to J. H. MURCHISON, Esq., No. 8, Austinfriars, London, E.C.

THE VAN DISTRICT.—MR. SPARGO has RETURNED to TOWN from a tour of inspection of the mines of this celebrated district. He has satisfied himself of the great value of many of the sets now being developed, and is PREPARED to GIVE a CONFIDENTIAL OPINION and PROFESSIONAL ADVICE, either personally or by letter. Fee, £2 2s. Gresham House, Oct. 8, 1869.

THE MINING ATLAS.—Part IV. now in the press. Will contain particulars of the various mines in the Van district, with plans showing their position and line of lodes. T. SPARGO, GRESHAM HOUSE, OLD BROAD STREET, LONDON E.C.

MR. W. WHITE (formerly Professor of Chemistry to the Collegiate School, York, and Braham College), ASSAY OFFICE AND CHEMICAL LABORATORY, No. 2, CROWN CHAMBERS, CROWN COURT, THREEDNEEDLE STREET, E.C.

Assays of every description of Minerals, and Analyses accurately conducted. Instructions in Assaying and Chemical Science. Lectures to Schools and Public Institutions. Mining Property Inspected and Reported upon. Consultations upon subject-matter of Chemical Patents, Manures, and suspected Adulterations and Impurities of Articles of Food and Commerce. Author of "Chemistry for Students," "Hints from a Chemist," "Chemistry of Vegetation," "England's True Wealth, or Focal Matters in their Relation to Agriculture," "The Graphite Fields of Tigonderoga," "Mineral Resources of Newfoundland," &c., &c.—Oct. 7, 1869.

SAFETY FUSE.—Messrs. WILLIAM BRUNTON AND CO., PENHALLICK, POOL, near CAMBORNE, CORNWALL, and BRYMBO, near WREXHAM, MANUFACTURERS OF FUSE, of every size and length, at exhibited in the Great Exhibition of 1851, and supplied to the Royal Arsenal at Woolwich, the Arctic Expedition, and every part of the globe. For the convenience of their customers and others in the North, W. BRUNTON and Co. have recently erected a branch manufactory at Brynbo, near Wrexham, where, as at Cornwall, they are at all times PREPARED to EXECUTE UNLIMITED ORDERS for SUPPLYING FUSE, upon warrant that it will prove equal to, if not better than, any to be procured elsewhere.

LEAD ORES.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Oct. 21	Pool Park	30	£12 15 0	P. Glover.
28	Brynpostig	20	11 6	A. Eytton.
29	Dyffke	45	12 1 0	Walker, Parker, & Co.
30	ditto	82	12 1 0	ditto
	Llanerchyrar	60	13 6	ditto
	Minera Union	12 1/2	12 10	ditto
Nov. 1	Chiverton Moor	45	16 2 0	Burby Port Company.
	ditto	15	9 0	Sheldon, Bush, & Co.
Nov. 2	Maes-y-Safn	50	12 15 0	Panther Lead Co.
	ditto	47	12 15 0	ditto
	ditto	6	12 15 0	ditto

BLENDE.				
Date.	Mine.	Tons.	Price per ton.	Purchasers.
Oct. 7	Pool Park	10	£3 18 0	Kenrick and Co.
29	Talacre	50	8 5 0	ditto
Nov. 8	Mid-Wales	20	2 1 0	Vivian and Son.

BLACK TIN.				
Date.	Mines.	Ts. c. q. lbs.	Price p. ton.	Amount.
Oct. 29	Rosewall Hill	9 12 0	22 1/2	£65 9 7
	Kitty (St. Ag.)	9 1 11	7 1/2	67 4 8
Nov. 2	Great Western	10 5 1	20 1/2	703 11 10

COPPER ORES.				
Sampled Oct. 20, and sold at Liverpool Nov. 3, by JAMES LEWIS and SON:—				
Lot.	Description.	Tons.	Price per ton.	Purchasers.
1	West Canada ore, ex North Amer.	56	£12 12 0	Jas. Keys & Son.
2	ditto	56	12 7 6	J. Bibby, Sons, & Co.
3	ditto ex Germany	56	12 4 0	James Radley.
4	ditto	52	11 9 0	St. Helens Copper Co.
5	ditto ex Nestorian	56	12 8 6	ditto
6	ditto	26	11 17 6	ditto
7	ditto ex Prussian	49	11 16 6	ditto
8	ditto	27	11 12 6	ditto
9	ditto	6	11 13 6	ditto
10	ditto ex Nova Scotian	23	11 11 6	Newton, Kentes, & Co.
11	ditto	10	12 3 0	ditto
12	ditto ex European	23	11 10 6	J. Bibby, Sons, & Co.
13	ditto	4	12 2 0	Newton, Kentes, & Co.
14	Italian ore, ex Rhone	35	19 9 6	St. Helens Copper Co.

COPPER ORES.																			
Sampled Oct. 20, and sold at Tabb's Hotel, Redruth, Nov. 4.																			
Mines.			Tons.			Price.			Mines.			Tons.			Price.				
West Seton			80	£2	8	6	East Pool			71	£2	18	6						
ditto			75	7	4	0	ditto			34	3	0	0						
ditto			65	5	11	6	ditto			25	2	14	6						
ditto			64	2	7	0	Bampfylde			53	1	18	0						
ditto			61	7	16	6	ditto			52	12	8	0						
ditto			56	3	5	0	East Rosewarne			43	3	19	6						
ditto			51	7	2	0	ditto			36	3	18	0						
ditto			40	4	1	6	ditto			15	4	3	0						
East Grenville			54	1	10	6	South Crofty			52	3	1	0						
ditto			51	2	19	0	ditto			41	2	12	0						
ditto			44	2	7	0	Copper Hill			41	2	4	6						
ditto			37	2	0	6	ditto			9	6	8	6						
ditto			5	2	3	0	South Frances			22	2	9	6						
West Basset			50	3	7	6	ditto			16	5	5	6						
ditto			45	3	13	6	ditto			7	2	13	6						
ditto			30	2	16	0	Wheal Buller			11	3	8	6						
Bampfylde			25	6	5	0	Wheal Grenville			4	4	19	0						
TOTAL PRODUCE.																			
West Seton			492	£2431	4	0	South Crofty			93	£265	4	0						
ditto			181	539	18	0	Copper Hill			50	149	1	0						
West Basset			150	574	7	6	South Frances			45	809	1	6						
East Pool			130	747	8	0	Wheal Buller			11	37	13	6						
Bampfylde			106	27	8	0	Wheal Grenville			4	19	16	0						
East Rosewarne			94	373	11	6													

Mineralogy and Mining—Royal School of Mines, Jermyn-street.

MR. WARINGTON W. SMYTH, M.A., F.R.S., will commence a course of FORTY LECTURES ON MINERALOGY, at One o'clock, and SIXTY LECTURES ON MINING, at half past Three o'clock, on MONDAY, the 8th of November, to be continued on each succeeding Tuesday, Thursday, Friday, and Monday, at the same hours. Fee for each course, £1. TRENHAM REEKS, Registrar.

Notices to Correspondents.

*. Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt: it then forms an accumulating useful work of reference.

ROTARY-PUMPS.—"R. F." (Nottingham).—No rotary-pump has hitherto proved economic in practice, if the centrifugal-pump be excluded from the category. The economy of rotary-pumps proper is altogether fallacious, the wear and tear of the parts far exceeding the alleged advantages derived from their use. The centrifugal-pump and the chain-pump could not properly be classed as rotary pumps, although it is true that in both cases the water is raised by a continuous rotary motion. To describe a centrifugal-pump or a chain-pump as a rotary-pump would be about as inaccurate as to describe a road wagon, because the wheels turn, as a rotary engine. A rotary-pump we should consider to be a pump which has the equivalent of a piston without a back stroke.

ILLUMINATION OF COLLIERIES.—"H. C." (Newcastle-on-Tyne).—We have not had an opportunity of examining the new lamp of Messrs Church and Co., to which "H. C." refers. The production of a brilliant white light without flame certainly appears to be an anomaly; it is more probable that the flame is thoroughly protected. Even the electric light, as proposed to be employed in collieries, is not without flame, but as the exposure of the illuminating points ensures the extinguishing of the flame, the electric lamp, such as that of Messrs. Dumas and B. not, is probably the nearest approach to a flameless light. But Messrs Church distinctly state that theirs is a gas-light, so that the absence of flame is improbable. We will endeavour in next week's Journal to give a detailed description of the lamp, when a more accurate opinion as to its merits can no doubt be formed.

THE WELDING OF IRON RAILS.—"B. R." (Dowlais).—The communication is an important one, and is only excluded this week through pressure on our space. The continuation may be sent at once, and will receive every attention. The opinions of really practical men are quite as much appreciated as those of the most profound scientists.

STEAM ON COMMON ROADS.—Can any of your correspondents inform me, through the Journal, whether any steam traction-engine is at present in use for common road purposes? I saw several doing very good work a few years since, but I suppose the re-eriction put upon their use by the authorities has prevented their general adoption.—H. K. F.

ROSEWALL HILL AND RANSOM UNITED MINES.—Is it true that amongst other little matters connected with the management of these mines may be found the following items charged in the cost-book for March, paid April 24?—Tin carriers' fees and expenses, selling tin this quarter, 12. 18s. 9d.; postage and receipts stamps, 2. 15s.; incidental expenses, 17s. 3d.; J. Rowe, conveyance to mine three pay days and account day, with book, 2l.; driver, 4s.; W. Crotch, carriage hire, committee meetings, 2l. 12s.; total, 10l. 2s.—A SHAREHOLDER.

MINING PROSPECTS OF MEXICO.—"H. S." (Dolgely).—We are obliged for the communication; it will be fully referred to in next week's Journal.

Received.—"J. B." (Glasgow).—S. "A. M. P."—A Constant Reader.

SCALE FOR ADVERTISEMENTS.—To avoid the necessity of frequent application we may state our general advertisement scale is—for six lines and under, 4s.; per line afterwards, 8d. Average, twelve words per line.

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

THE MINING JOURNAL, Railway and Commercial Gazette.

LONDON, NOVEMBER 6, 1869.

FOREIGN COMPETITION.

For the past three or four years there has been a great depression in the staple trades of this kingdom. Whatever the cause, our manufacturers, as a rule, have had "hard times." Not only in iron and coal, but in hardware, in woollen fabrics, in Manchester goods, and in every other department of trade, manufacturers and merchants have had to contend with falling markets on the one hand, and increasing wages on the other. Contention with such elements has been up-hill work, sufficient to try the commercial stability and energy of the nation. It is, however, satisfactory (now it is generally admitted upon all hands that there is a material improvement in trade, and when the Board of Trade returns prove a gradual revival), to look back upon the past, and feel that our commercial status remains secure and unrivalled, and that England, all things considered, never stood in a prouder position, so far as the supremacy of her trade and commerce is concerned, than at the present moment. We do not wish to attempt to gainay the fact that our trade and commerce have not been shaken in some of its departments—that gigantic concerns have not suddenly collapsed—that there has not been much unsound commercial speculation—that some of the limited liability companies have not suddenly broken down under the pressure of existing exigencies, and that some concerns, thought to be successful and prosperous, have failed, causing much privation and distress. We readily admit all these things; but other nations have also similarly suffered; and regarded as a whole, taking all concomitant circumstances into consideration, England has safely out-riden the storm; and whilst failures have been the result of over speculation and reckless trading, the stability of the nation remains, and there is much in the past to encourage us to look hopefully forward to the future.

The depression which has existed for several years past, and which we readily admit exists to a great extent at the present moment, naturally induces the enquiry as to the cause. Latterly some of our leading merchants and manufacturers have ascribed the cause to the free-trade policy inaugurated some years since, and of which the late Sir ROBERT PEEL may be regarded the champion. It is not our province to discuss the political aspect of the question, but there is certainly a good deal of force in the argument that it is not placing us on a fair and equal footing with foreign manufacturers to admit their productions into our country without duty, whilst all English goods and manufactures are subject to heavy dues when imported into the continental and other States. That is scarcely fair play to the English manufacturer; and what some now so earnestly demand is, practically, a return to protection. It is, however, simply idle to contend for that which there is no hope of obtaining, and we do not suppose that even the most sanguine agitator firmly believes that this country will ever again return to protection. Reciprocity of free-trade principles—a throwing open the European ports to the manufactures of England, would, if it could be obtained, be a great boon, and place us on more equal terms of competition with continental States, but it is extremely problematical whether other nations will consent to the adoption of such a step. Whilst then, we cannot expect that this country will ever again return to the days of protection, and whilst there is but little hope of British manufactures and goods being admitted free of duty into other States, let us look boldly and cheerfully at things as they exist. We have powerful rivals to contend with. Let the knowledge of this fact spur our manufacturers into increased activity and determination not to be beaten in the race of commerce. So long as England can manufacture as cheaply as other nations, so long will her goods always find a ready market. We have disadvantages to fight against, difficulties to contend with. Our goods are barred entrance into the continental ports by high duties. In our manufactures we have to contend with a rate of wages at least 25 per cent. higher than those paid in the French and Belgian States; but, on the other hand, we have what other European nations so signally lack. We have an inexhaustible supply of coal and iron. These have been truly said to be England's "back-bone." And so they unquestionably are—they have proved hitherto, and they will prove again, to be the strength of the nation.

Let us take courage, then, for the future. We certainly do not belong to that section of the community who are always ready to decry against England's prosperity—who believe her trade and commerce are on the wane. We may not be able to "presume upon national superiority as something indefeasibly our own," but we still possess the same elements of stability and greatness as formerly. French and German manufacturers may practically exclude us from some States

by importing a cheaper article, but other nations and other States are still open to us. The markets of the East open up to English trade and manufactures almost boundless sources of commerce. Vast empires are only just awakening to the necessities and importance of commercial relationships. In other nations the march of civilization is rapidly spreading, to be assuredly followed by an almost unbounded demand for manufactured goods. The energy, perseverance, and wealth of England will always carry her forward as the pioneer of new trade and commerce, making markets for her goods which other nations can but feebly follow, whilst the solid workmanship and general superiority of manufacture will always render English goods acceptable and valuable where such qualities can be recognised and appreciated.

IMPROVEMENTS IN IRON AND STEEL.

The report of M. Le Baron GRUNER, chief of the French Commission appointed to examine and report upon the nature and efficiency of the Heaton process of purifying and converting cast-iron, was noticed in the Journal of last week. As a translation of this valuable and instructive contribution to the metallurgy of iron and steel is about to be published in London, it is unnecessary for us to give more than an outline of the facts and principles established by it, referring to the document itself when necessary.

Monsieur GRUNER begins by stating very clearly the practical problem in metallurgy to be solved, pointing out the various impurities to be removed from the cast metal, and summing up the principal attempts which from time to time have been made to remove them, with the sources of their failure (pp. 1-3). He then passes on to a very full description of the apparatus and process of Mr. JOHN HEATON (pp. 8-11) which has already appeared in the pages of the Journal.

In page 11 he gives his analysis of the native nitrate of soda of Peru, first introduced into metallurgy by Sir FRANCIS KNOWLES, under his patents of 1857-59, in the puddling-furnace, and we are informed with most extraordinary effect upon the quality of the produce. He finds by this analysis that the nitrate is sensibly free from sulphates and phosphates—a very important fact. M. GRUNER then describes, as we have before shown in the Journal, the singular phenomena attending the Heaton process, the nature of the raw produce, and its subsequent treatment for iron and steel. He then passes on to the object of his commission—the trial of the Heaton process upon the cast-iron of Longwy and Hayange, in the Moselle. The metal of Hayange was a foundry pig, very hot, grey, with a large grain, and very "kissy." That of Longwy was white, radiated in its structure, and with a slight tendency to "mottled." It may be called "forge No. 5." These were re-melted in the cupola with a little fluor-spar, to take up the coke cinders, and a loss estimated at about 7 per cent. M. GRUNER gives in page 19 his analysis of these metals.

On reference to these and to the various tables given in his report, it will be seen that whether we regard the general phenomena attending their refinement and conversion by the Heaton process, or the chemical constitution of their first raw produce, or that of the successive kinds of metal—iron and steel—resulting from the various treatment of that produce, or that of the scoria, we have presented to us by the Longwy and the Hayange raw pig metal two distinct types of cast-iron—the non-silicified and the silicified. Each of these, M. GRUNER states and proves, requires a different treatment, corresponding to its different original constitution.

He found that the silica resulting from the 3 per cent. of silicium in the Hayange metal so monopolised, as it were, the nitrate of soda with the soda, of which it formed a basic silicate, as to leave the phosphoric acid quite free, which, being thus again reduced, re-enters the metal as phosphorus. This left but one alternative, either to increase the dose of nitrate, which would render the process too costly, or to submit the metal to a distinct preliminary treatment, which we shall see M. GRUNER recommends and describes. But we pause to make an observation, which we submit to our ironmasters, as well as to those whose minds are occupied with the improvement of our iron metallurgy—that there is no chemical method which can at once apply to these two varieties of metal, and no manufacturing operation which can successfully embrace both of them.

M. GRUNER ascertained, both by direct analysis of the different kinds of produce and of the scoria of the Heaton method, that the dose of nitrate of soda was considerably below what the chemical conditions of the elements and their quantities should require—in fact, that instead of 9½ or 10 per cent., it should be 12 to 14 per cent. for the silicified metals; but he suggests economy by the use of other re-agents. One most valuable and important result he establishes as due to this process—the waste of metal in no case exceeds 1 per cent. In no known process is so small a loss to be found. It is to be hoped that in future trials of this process care will be taken to insure the proper working up of the produce, some of which M. GRUNER says was burnt by unskilled hands at Langley Mills, and so exhibited an undue shortness of fibre, and other imperfections. The proprietors of the company owe it alike to themselves and to the public to put their produce into the hands of none but first-rate workmen.

Baron GRUNER also observed that the process acts more perfectly the hotter the metal is delivered into the converter from the cupola. The average duration of the process was only 5 minutes 37 seconds. After a very full discussion of the subject, Baron GRUNER writes as follows (p. 76):—

"The following is a resume of the formula of treatment (of inferior cast-iron) which, in my opinion, would permit its (the Heaton process) application in a useful manner, with a view to producing with this kind of cast-iron a metal fit to make rails:—

1.—The cast-iron, according to the practice in a certain number of Welsh iron works, should be directly run out from the blast-furnace into the finery fire, or, better still, into a boiling furnace, there to be refined by air and oxide of iron.

2.—Thence the refined metal should flow into the Heaton converter, there to undergo the action of the nitrate.

3.—Lastly, the metal doubly refined should be delivered directly, either solid or fluid, into the Martin-Siemens furnace, to be there transformed, by the addition of soft iron and spiegel-eisen, into cast steel little carburized, or into homogeneous iron. Let us add that if the refining were pushed in the converter so far as the decarburization of the iron properly so called, the refined metal might even be charged into the Martin furnace, in lieu of the soft iron ordinarily therein used. This depends on the degree of the purification attained.

It is needless to add that if the cast metal contain on y 1 per cent. of silicium, and ¼ to ½ per cent. of phosphorus, we might then suppress the slagging or preliminary refining, and pour the metal directly from the blast-furnace into the Heaton converter."

We have put this sentence into italics because its whole significance is not immediately apparent. It means, further, that if we choose to treat the purer kinds of cast metal, made from hematites, &c., by the Heaton method, we can obtain homogeneous iron or cast steel absolutely pure in a few minutes, with a less expenditure of nitre, and a loss not exceeding 1 per cent. of metal!

THE BRAZILIAN SUBSTITUTE FOR COAL.

Upon the commencement of any new industry, some opposition from those connected with previously existing interests has almost invariably to be encountered, and it appears that the endeavour to give a commercial value to the turba deposits of Brazil has formed no exception to the general rule. The probability of the undertaking becoming highly remunerative, in a commercial sense, has been questioned, and the rights of concessionaires, from whom the Brazilian Gas Fuel Company acquire the property has been, by inference at least, denied. As to the value of the substance as a gas-producing material, it is explained that the "turba is certainly lighter than coal, but that there is no more difficulty in dealing with it than with the Boghead Cannel of Scotland, which is well known, and which it much resembles," which may be accepted as a confirmation of the statement previously put forward by those interested in the enterprise, that "the material has great absorbent qualities, and will take up a very large quantity of liquid petroleum, which will have the effect of increasing its specific gravity, while the increased supply of gas which it will yield when thus charged with the petroleum will serve to make up for the cost of freight." To question Mr. NICOLAY's ability to advise upon geological subjects connected with a locality he is intimately acquainted with will be so generally acknowledged to be unjustifiable, that the insinuations which have been made need not be referred to, more especially as it is authoritatively stated that all questions as to cost of produce, shipment, and price of delivery (which are certainly the most important con-

siderations for a commercial company) have been submitted to engineers and gentlemen at the present moment connected with the gas works and other commercial enterprises in Brazil consuming fuel now exported from England; and it has been ascertained that turba (the material proposed to be excavated) can be conveyed from the beds to the city of Bahia at from 4s. to 6s. per ton, and to Rio de Janeiro at about 10s. to 12s. The cost of excavating and shipping has been carefully estimated as certainly not more than 4s.—so that the cost in Bahia would be about 8s. to 10s. per ton, as against coal at a minimum of 35s., the quantity of gas obtainable being nearly double that yielded by coal at this price, and the illuminating power of the gas itself being as three to one.

With regard to the question which has been raised as to the rights of the vendor through whom the company acquires the property, every point appears to have been most satisfactorily explained. Mr. W. KNAPP HENDERSON has made the most searching enquiries, and writes that it is quite true that a concession was originally given for working beds of turba in the same district to American gentlemen, who, although quite alive to the value of the deposits, obtained the concession simply for the purpose of selling the same. With that view they sent an agent to England, and up to the time of the lapsing of their concession, last year, that gentleman was engaged in attempting to effect a sale, asking as much, in the early part of the year, as 60,000l. An arrangement was actually entered into by the promoters of the present company for the purchase of that concession from this American gentleman, subject to the stipulation that before asking the public for subscriptions a gentleman should be sent out to Brazil to obtain a transfer of the concession and recognition of the transferees by the Government. This step was taken; but, upon the arrival of that gentleman in Brazil, it was found that the concession to the Americans had lapsed by effluxion of time, and that the Government had granted a new concession to Mr. EDWARD P. WILSON, of Bahia, being the concession which has since been transferred to the promoters of the present company.

NEW STAMPING MACHINERY.

A very interesting experiment has been tried at the works of Messrs. HARVEY and Co., Hayle, Cornwall, with a battery of novel construction, named by the inventor "Atmospheric Stamps." It is an American invention, and was introduced to the notice of Messrs. HARVEY and Co. by the inventor, Mr. COLVER, of New York. Messrs. HARVEY and Co. have entered into an arrangement with the patentee for manufacturing these machines in England. On Friday, Oct. 29, more than 100 gentlemen, connected with English and foreign mines, witnessed the experiment. They were afterwards entertained by Messrs. HARVEY and Co., when several gentlemen expressed their opinions respecting what they had seen. The opinions expressed were unanimous as to the perfect working of the machine, and the success of the experiment; and the general feeling was that the battery would entirely supersede the ordinary stamps for foreign mining, and prove to be of great value for England, and for Cornwall especially. Counterparts of this battery have been stamping in the States for the last 12 months, with great success, the wear and tear being very trivial; this might have been expected, from the almost total absence of noise in the experiment at Hayle.

The Battery with which the experiment was tried consists of six heads, all working in one coffer, contained in a strong cast-iron framing; the crank-axle running in two plunger blocks, carried on top of side frames, which are 62 in. apart; and the height from ground to centre of axle, 110 inches; the total weight, including everything, 8½ tons. The right-hand side frame is constructed to attach on the outside of a small steam-engine, for driving the battery, but in the experiment the crank was driven by a belt and pulley. (A portable engine of any kind may be used for driving, provided a strap can be applied to it.) A direct motion is given to the six heads by an overhead six-throw crank, the cranks having an equal radial division, ensuring a perfect balance in rotating. The throw of each crank is 10 inches, but the stroke of stamp-heads varies from 15 to 18 inches, the height to which they are lifted being constant, but the descent is limited by the quantity of ore in the coffer. The motion is conveyed from the crank to cap and guide cross-head, on piston-rod, by an ordinary connecting-rod; attached to its lower end is the piston-rod, and piston packed with double reverse cup-leather packings; the piston is 4½ in. diameter, and operates freely in the upper part of a gun-metal cylinder, 3½ ft. in length; attached to the bottom of this cylinder, by a socket in the usual manner, is the round stamp-head of chilled cast-iron, 9 inches diameter. It will be at once perceived that the difficulty to overcome was to give a long and variable stroke of head, with a short and constant throw of crank; this, however, has been accomplished, as with forging hammers, in the following manner:—The upper end of the cylinder is bored, to receive the piston, to a depth of 14 inches; the piston-rod plays air-tight through the cylinder cover, which is screwed metal to metal on the cylinder. The working barrel of cylinder is pierced with two sets of small holes, for the ingress and egress of air, discharging the air behind the piston after it has been once used as an elastic cushion. Suppose the head to be set in motion with the crank in a horizontal position, the piston being in the middle, vertically, of the working barrel of cylinder, and midway between the two sets of air-holes referred to. As the crank and attached piston rise, the air is compressed between the piston and cylinder cover, and the cylinder, with stamp-head attached, is forced upwards. When in rapid motion, the elasticity of the compressed air between the piston and cover flings the cylinder, with head, some inches above the range, due to the motion of the crank; on the descent of the piston below the bottom set of holes in the cylinder, the air is compressed in a similar manner, and the cylinder is forced down by the compressed air between the piston and cylinder bottom, until the stamp-head strikes the ore in a coffer-trough; thus, whether the quantity of ore be large or small, the blow is always effective, the only difference in the working of the machine being a shorter or longer vertical play of the cylinder and head. The whole external arrangement for driving one head resembles a small vertical steam-engine, with a stamp-head attached to the cylinder bottom, with this difference, when in action the crank works the piston, and both piston and cylinder have a vertical play. The cylinder, as already stated, serves as a lifter for the stamp-head, and works in a deep guide, running across, and uniting the side frames. Water is admitted into a chamber at the bottom of the guide, and escaping downward, around the cylinder, into the coffer, prevents the pulverised ore from being forced between the guide and cylinder, keeping the rubbing surfaces clean in a very effective manner. The flow of the water also prevents the heating of the cylinder, which would otherwise result from the continual compression of air, and also supplies the necessary water for mixing with the ore in the coffer; grate-plates are fixed on each side, and extend the whole length of the coffer, giving an area of 250 square inches per head.

The tin ore was supplied for the experiment by Mr. HIGGS and Capt. HOLLOW from the Providence Mines. The ore was reduced to the size of road metal (the pass as constructed being adapted only for such size), and, consequently, did not require so much stamping to reduce it as ore of the size usually supplied to the batteries in Cornwall. It was generally considered, however, by the mine agents present that whereas the stamps at Providence Mine reduced 1 ton of the ore per head in 24 hours, the same stamps would reduce 1½ to 1¾ ton per head in the same time, provided the ore be reduced to the size used in the experiment. On the other side there were no small stamps (and these form a large proportion of all the hard stuff raised in the county of Cornwall); this was not taken into account in the comparison, and tells in favour of the Atmospheric Stamps.

The experiment lasted 68 minutes, and the quantity of ore stamped was 38 cwt., making in round numbers 40 tons in 24 hours, or at the rate of 6½ tons per head. Capt. HOLLOW considered the stuff reduced as fine as they reduce it in the Providence Mines, and quite satisfactory as to size. Making the necessary allowance for size of stuff, the quantity reduced per head was at a rate five times as fast as at the Providence Mines; and making an allowance for usual stoppages of 3 hours in the 24 hours, and for other hindrances, the rate may be safely taken at 4½ tons in 24 hours per head of Atmospheric Stamps, against 1 ton stamped in the same time by one ordinary stamp-head under favourable circumstances. The ore stamped was very hard, a much greater quantity of quartz rock could be stamped in the same

time. At the termination of the experiment every rubbing part of the machine was cool, and in perfect order, although each head had been making from 140 to 150 blows per minute. During the operation of the battery the stamp-heads are continually turning, thus insuring an even wear of head and ground. It will be obvious to the miner that no springs or catches are required, for it matters not whether the crank turns to the right or left: this saves complication, and prevents frequent cause of accident.

It is certain from the trial of these stamps, and from many months working in the United States, that six heads of the atmospheric battery will stamp as much ore as 27 heads of ordinary Cornish stamps. The weight for performing the same amount of work will be as 9 to 25, and the area occupied as 1 to 4; the height of the atmospheric battery is also much less. It is obvious that this is of the utmost importance for foreign mines where transport is expensive; and for gold a large stamping power may be enclosed in a small house, insuring greater protection for the gold amalgam, with many other obvious advantages. Another great advantage is the portability of the Atmospheric Stamps; a few hours will suffice to erect it, with its driving-engine, and no preparation of ground is required for its reception, beyond a flat, firm surface, the whole being self-contained. Nor is the liability to accident in working greater than with the steam-engine for driving the battery. These advantages will, there is little doubt, insure the exclusive use of these stamps for foreign mines, and had the plan been introduced a few years since the success of many gold mines would have been secured, whereas owing to difficulties in preparing and erecting machinery for returning the ores they have turned out failures, and been abandoned, with great loss to the shareholders, and injury to mining speculation generally. The Atmospheric Stamps open up a new field, and supply the greatest desideratum in the present state of mining enterprise.

It is confidently expected that the machine will also prove of great value in Cornwall; thousands of tons of tin ore are annually raised in the county too poor to put through the stamps, but by cheapening the process of stamping these ores may be returned, giving increased dividends to the shareholders, and employment to the labourers.

THE CHEMISTRY OF THE MINE.

Dr. HILL delivered his third lecture on "The Chemistry of the Mine" at Walsall, on Tuesday evening. The subjects treated of were—"Fire-damp, its physical and chemical properties; after-damp, cause and prevention of explosions; safety-lamps; ventilation, importance of it; effects of impure air on the health of the miner; quantity of air required for men and horses; means to be adopted to resuscitate sufferers from the effects of poisonous gases, &c." There was a large attendance, upwards of 250 being present. The lecturer was introduced by the President of the Institute (Mr. D. Peacock).

Dr. HILL said: Light carburetted hydrogen, or fire-damp, proceeds, like marsh gas—which is, indeed, the same substance—from vegetable matter decaying in damp places, all coal consisting of vegetable matter. For experimental purposes, the gas might be obtained from a salt of acetic acid. When burned, it produced carbonic acid and water. The combustion of carburetted hydrogen is a safe and simple process when it is effected gradually; in fact, it forms about 40 per cent. of common coal gas; but if a mixture of carburetted hydrogen and oxygen be inflamed, they suddenly unite with a loud and violent explosion, the force of which is calculated to equal a pressure of 555 lbs. on the square inch. A similar result follows the application of a light to a mixture of the gas with air, because air contains oxygen; but in consequence of the oxygen in the air being diluted with inert nitrogen the explosion is more feeble than when the fire-damp is mixed with pure oxygen. But though this explosion is comparatively weak it is absolutely very powerful, being calculated to exert a pressure of 210 lbs. on the square inch, which is amply sufficient to account for the destructive violence of coal mine explosions. Fire-damp, then, explodes when mixed with either oxygen or air, and a light is applied; but it does not do so in all proportions. The most favourable proportion for explosion is one volume of fire-damp to eight or ten of air; but when the volume of air is either very small or very great no explosion takes place. When the air amounts to seventeen times the volume of the gas there is no explosion, or if it is less than four times the volume of the gas the mixture is equally harmless. Fire-damp (light carburetted hydrogen) is very light compared with air, and it therefore, occupies the highest place in mine workings; and it may, therefore, be lighted without danger, provided the quantity is very small. He had heard of workings where a lighted candle held for a moment near the roof would produce a slight explosion, but by hold it near the floor it would be extinguished, the extinction being caused by carbonic acid gas, which occupies the lowest place, because it is heavier than air. The temperature requisite to ignite inflammable gases differs very much, and fire-damp requires a higher temperature than most others. This is a very favourable circumstance in connection with the construction of the safety-lamp, and this accounts for the fact that, in making very urgent explorations in an explosive mixture of the gas, the Davy lamp may be continued to be used when red-hot, but this, of course, should only be done under the most urgent necessity, as, for instance, the rescuing of life when in imminent danger. A red-hot solid body will not inflame a mixture of fire-damp and oxygen. Flame will ignite it, but even flame must be allowed to remain in contact with the mixed gases a certain time in order to heat them to a certain point, or else no explosion will occur. The original safety-lamp of Stephenson was constructed in accordance with these facts. The flame was surrounded by a tall chimney, the rapid draught through which did not allow the combustible mixture to remain long enough in contact with the flame to become heated as high as the point of ignition.

Sir Humphry Davy acted upon a different principle in the construction of his safety-lamp. Flame is extinguished when its temperature is lowered to a certain extent. In blowing out a candle the extinction is produced principally by the excessive supply of air cooling the flame below the temperature at which it can burn. Coals are readily extinguished if taken from a fire and placed separately on good conductors, such as iron, &c., and it was upon this property of metals as good conductors that Davy relied in the construction of his lamp. That metals are good conductors may be easily demonstrated. If one end of a rod of metal be heated, the other end soon becomes hot. The heat is conducted along the bar. Now, if heat be conducted along the bar, the bar must first receive the heat from something which to that extent must be cooled. If, instead of using a bar, a coil of metal be placed over the flame of a candle, the flame will not burn inside the coil, though there is plenty of room. If the coil be depressed until it surrounds the wick, the flame will be extinguished; the heat necessary for its existence being carried away by the wire. That the extinction of the candle flame is due to the cooling effect of the copper is seen by making the copper very hot, when it will no longer extinguish the flame. A round tube of copper would answer the purpose as well as the round coil; a square tube would answer equally well, and the longer the tube the better it would conduct. Practically, a very large number of very short square tubes, of exceedingly small diameter, are as effective as longer tubes of greater diameter; hence the value of "wire gauze." The smaller the tubes the better the conducting surface; 700 or 800 meshes in the square inch answer very well, but a gauze having 28 divisions to the square inch each way, or 984 meshes to the square inch, is considered to be a proper standard. If such a piece of gauze be depressed on a gas flame it nearly extinguishes it, and the flame will not pass through it; or if the unlighted gas be allowed to pass through it, the gas may be lighted above the gauze without the flame communicating with the part of the jet which is beneath the gauze. Even burning spirit, when poured upon the gauze, will be extinguished, the spirit passing through, and the flame being unable to accompany it. Upon the simple principle illustrated by these facts Davy constructed his lamp, which was nothing more than an oil lamp, surrounded with a cage of iron-wire gauze. In speaking of the beautiful simplicity of the Davy lamp, a previous writer has said—"Here may be seen the enemy in harmless coruscation, shorn of its strength, imprisoned in a slender cage, which the wand of science has encircled around the angle of death." When this lamp burns in a mixture of fire-damp and air, the mixture passes into the lamp, and burns there, but the flame cannot pass out of the cage to ignite the explosive atmosphere in the pit. If the lamp be introduced into

a vessel of air representing a pit, it continues to burn as usual; but if coal gas—representing fire-damp—be admitted, the flame of the lamp lengthens and flickers, and will at last be extinguished, while the explosive mixture of fire-damp and air continues to burn within the cage. When this appearance occurs in the workings the miners should at once accept the simple but infallible warning, and withdraw, because in time the wire gauze will become so hot as to ignite the external fire-damp, and cause the very accident which it is its function to prevent. Miners object to the use of the lamp because it gives little light, but there are many modifications of the lamp by which this defect is obviated, principally by the introduction of glasses into the cage in front of or around the flame. Naked flames ought never to be used in testing the presence of gas, or in pits where large quantities of gas are thrown off, because it is impossible to say when a "blower" may be opened by the miner's pick.

Here the learned lecturer described the rude means for getting rid of the gas in pits before the invention of the Davy lamp. This, he said, was done by the old firing-line. Some foolhardy workman was engaged to shut himself up in the mine in a recess or box made for the purpose, having a small communication with the downcast shaft by which he could get pure air, and then, by aid of a line drawn with a lighted candle over a pulley to the roof of the mine explode the gas, and get rid of it by those means, often doing great destruction to both life and property. This rude method was followed by the old steel-mill, one of which was exhibited, and seemed very much to amuse the audience. Light from this instrument was produced by turning a plain disc by means of cog-wheels, against which was held a piece of flint, throwing off a stream of sparks, by which feeble means the coal hewer was enabled to see, or rather feel, his way. These sparks are said to lead to explosions, and the immortal Davy, after laborious research, invented the present Davy lamp in 1815, the greatest boon the coal miner ever had.

The ventilation of our mines is a matter of the very greatest importance. Even on the surface of the earth, where every habitable spot is comparatively open to the operations of diffusion and dispersion by winds and currents, houses, &c., may become so foul as to be unfit to support healthy respiration; but in a mine, where there is communication with the air by only one, or at most two, narrow long openings, the difficulty of obtaining a plentiful supply of pure air is, of course, much greater. The effect upon air of its being breathed is very remarkable. Taking a jarful of air, for example, it readily supports the combustion of a taper, but let a portion of this air be breathed, and the candle no longer burns in it. Air that has been breathed is as unfit to support life as it is to support the combustion of a candle. Indeed, the animal organism is even more susceptible than the candle is of the effects of air charged with carbonic acid gas. Of all general causes of disease impure air is the most common and the most dangerous. The effect of burning candles, lamps, &c., is the same as that of breathing. A taper will burn only for a short time under a bell-jar. A room containing six persons, and illuminated by six gaslights, has its air vitiated as much as if it contained nine persons. In mines it is absolutely necessary that there should be two separate passages for the incoming fresh air, and outgoing impure air. If an open lamp-chimney be placed with its lower end resting on the table over a burning candle the flame will be very soon extinguished, but if the chimney be raised a little from the table the candle continues to burn, because in the latter case there are two openings—one for incoming fresh air, the other for outgoing impure air; while in the former case there is only one opening.

Having further described the proper means of ventilating mines, Dr. Hill made some remarks upon spontaneous combustion. He said that the sulphur in coals does not cause spontaneous combustion; on the contrary, the coals which contain the smallest quantity of sulphur are most frequently the subjects of spontaneous combustion. By sulphur he meant sulphide of iron, and not gas. He had learnt that the carburetted hydrogen of the mine was loosely called "sulphur." This was a misnomer, and should be disused, and the term gas used instead. In conclusion, the lecturer strongly ridiculed the old notion of placing the sufferer's head in a hole, from which a turf or sod had been previously cut, and the turf placed on the back of the patient's head. Instead of which he recommended plenty of fresh air, stimulants, and artificial respiration. He strongly deprecated a heavy hot mid-pay meal, and a large quantity of beer in the pit, suggesting that that meal should be taken at the close of the day's work at home, as being much better. The lecturer then gave some good general advice as to the personal habits of the miner both in and out of the mine, and hoped that the course of lectures which he had the pleasure of giving might be both of immediate and ultimate benefit to the large and important class of persons constituting the mining population.

Mr. W. H. DUGAN proposed a vote of thanks to the lecturer, and said he did so with the more pleasure because for many years Dr. Hill had been an intimate friend of his, ever since, in fact, they were schoolfellows together, for Dr. Hill was a Walsall man, and he was proud that the old town had produced a man of so much ability and learning. (Applause.) He had no doubt the information contained in the lecture would be as valuable to those for whom it had been prepared as it had been interesting. (Applause.)—The proposition was seconded by Dr. WYLLIE, and heartily carried.

Dr. HILL returned thanks; and a vote to the President having been awarded and acknowledged by that gentleman, the latter proposed a hearty vote of thanks to their indefatigable honorary secretary (Mr. Henry Johnson) for having originated so interesting and instructive a course of lectures, when the proceedings ended.

Mr. William North was appointed Vice-President of the Institute for the present year.

[We understand the three lectures, which in the end will cost the Institute a considerable sum, are to be printed and distributed amongst the mine managers of the district generally.]

INDIAN COAL.—We learn that a trial by the Great Indian Peninsular Railway has been made of the suitability or otherwise of Chanda coal for the use of railway locomotives in India, and the result has not proved quite satisfactory.

THE EXPORT COAL TRADE.—The exports of coal from the United Kingdom in September amounted to 1,010,060 tons, as compared with 998,303 tons in September, 1868, and 1,097,508 tons in September, 1867. In these totals the exports to France figured for 157,748 tons, 155,097 tons, and 164,056 tons respectively. In the nine months ending Sept. 30, this year, our coal exports attained an aggregate of 7,931,982 tons, as compared with 8,301,286 tons in the corresponding period of 1868, and 7,812,947 tons in the corresponding period of 1867. France contributing to these totals 1,490,811 tons, 1,436,479 tons, and 1,560,048 tons, respectively. The exports of coal have increased this year to Russia (slightly), the Hanse Towns, France, and Italy; but they have decreased to Sweden, Denmark, Prussia, Holland, Spain, the United States, Brazil, and British India. The value of the coal exported from the United Kingdom in September was 479,752*l.*, as compared with 485,519*l.* in September, 1868, and 564,477*l.* in September, 1867; and in the nine months ending Sept. 30, this year, 3,786,266*l.*, as compared with 4,096,326*l.* in 1868, and 4,034,152*l.* in 1867 (corresponding periods).

GUNPOWDER AND GUN-COTTON.—Some interesting experiments are at present being carried on at Portsmouth for testing the relative effects of gunpowder and gun-cotton under equal and unequal conditions, and for ascertaining the comparative action of the regular service fuse used in firing mines, and of the new detonating fuse invented by Abel, the chemist to the War Department. The gun-cotton was in most instances used in the forms of discs and cylinders, and when placed in proper position gave excellent results; but it appears by slight carelessness the greater proportion of the advantage is lost.

IRISH MINES.—The dispute between certain seceding directors of the Mining Company of Ireland and the existing board, supported by the great body of shareholders, respecting the purchase of the Berehaven Mine from Mr. Puxley, has, it is said, been amicably settled, after having entered upon the first stage of what was likely to be a protracted litigation. An understanding has been come to by which a new company is to be started under the title of the Berehaven Mining Company, with a capital of 300,000*l.*, in 60,000 shares of 5*l.*

each. The shareholders of the Mining Company are to have the option of taking 26,000 shares, and 34,000 are to be at the disposal of the new company.

REPORT FROM WARWICKSHIRE.

During the past two months the Coal Trade has considerably improved. There is a fair demand for best house coals at prices ranging from 9*s.* to 10*s.* per ton. The greater portion of the Warwickshire coals are conveyed along the London and North-Western Railway to towns and markets south. The demand for truck sale has become comparatively brisk, at prices into trucks from 4*s.* cobbles to 8*s.* and 9*s.*; the average price, however, would not exceed 7*s.* per ton. It is generally admitted now that the coals of this coalfield are much improved, and that, if known, ought to maintain a good demand in competition with coals from other neighbourhoods.

We understand the Charity Colliery owners are extracting nearly all their output of Two Yard, Rider, and Slate coal from a distance of 1200 yards in dip, and that the coals are much superior in quality. This colliery, though comparatively new, is capable of a large output, and no expense has been spared in making it equal to any demand. With reference to this colliery, we may mention that an electrical signal is in vogue along the engine planes for the length of over 1000 yards, dipping 1 in 6, and far superseding the old system of wire and lever. The Hawkesbury Colliery seems fully engaged in supplying the demand—in fact, we believe the latter exceeds the former. On good authority we understand that endless chains have been tried in this colliery in lieu of the tail chain, but without that success which other trials had warranted them in anticipating. We may here observe that the circumstances in which the endless chain system is working successfully are different to those in parts of Warwickshire. In adopting this system care should be taken to note the diverse circumstances. Near Nuneaton a new firm are prosecuting with spirit the opening of mines. Minerals of coals and ironstones have been already proved to exist, and means are being adopted to extract such from the dark regions. We quite agree with your correspondent, Mr. T. Parton, F.G.S., that the great desideratum of this coalfield is the erection of furnaces. We have no doubt but that it will ultimately come to this. We think the sooner the better.

There is a good demand for white and black ironstone for the South Staffordshire market at prices ranging from 12*s.* to 12*s.* 6*d.* into boats.

REPORT FROM SCOTLAND.

Nov. 3.—Our Pig-Iron Market is giving indications of a tendency to further improvement in prices, the quantity consumed by local melters being very much in advance of last year, and the deliveries from Middlesborough being inadequate to effect any efficient counterpoise. In these circumstances the stocks in store have had to be reduced by 1673 tons, leaving in Connal and canal stores 329,505 tons, for which there are warrants in circulation for 311,600 tons, leaving a margin of about 18,000 tons to be still operated upon. For the week just closed the shipments are in excess of those of last year the relative proportions being for this year 11,615 tons, against 10,265 tons, with 125 furnaces in blast, against 119 in the corresponding week last year. Last week closed with prices of pig-iron at 53*s.* 3*d.* cash, and 53*s.* 6*d.* one month; this week the market opened firm, and closed on Monday at 53*s.* 4*d.* cash, which was yesterday continued to the close, with buyers over. To-day the market is steady, and about 5000 tons sold, at 52*s.* 6*d.* to 53*s.* 9*d.* cash, and 53*s.* 9*d.* to 54*s.* one month, closing a shade easier. Gartsherrie and Coltness, 61*s.*; Langloan, 55*s.* 6*d.*; Eglinton, 52*s.* 6*d.*; Clyde, 53*s.* 6*d.* No. 1, g.m.b., 53*s.* 3*d.*; No. 3, 52*s.* The advance in the South is helping prices here, along with the continued extra demand for local melters. Merchant iron keeps well in demand, and while there is a fair and full business passing in bars and rod, angle and nailrod employ several mills, and some makers are even behind with their delivery of angle. The Gartcosh works, which we suppose will now be in full operation, are taking orders from all and sundry at 6*l.* 10*s.* to get into market, which has prevented the other makers about Coatbridge from agreeing to advance all kinds of manufactured iron 2*s.* 6*d.* a ton, as they had intended. Considering the intermittent way in which the proprietors of Gartcosh have prosecuted their business—at one time in full operation, then standing idle, and next offering their works for sale—one cannot tell how long or how short their depressing influence may be made to operate on the market; but one thing is certain, that the price of pig-iron will compel makers of finished iron to advance their prices, whatever suicidal policy the Gartcosh proprietors may pursue. There have been considerable shipments of corrugated iron to the antipodes for architectural purposes, and also some fine verandah castings for India—these latter at special rates. Otherwise there is no change in quotations or discount.

The Coal Trade is so partially improved, that masters are scarcely experiencing any difference in demand, and with the enhanced wages of colliers have not been made better by the change. Indeed, in some cases, rather than give the advance, masters who have only shipping qualities of coal to dispose of have been obliged to refuse to accede to the colliers' demands, and have shut their pits for a time. Still, it may be said generally that the coalmasters in the Wishaw and Lesmahagow districts have agreed to the advance of 6*d.* per day from the 1st instant, and the colliers in the other districts will not lag long behind. This is being done while the weekly shipments are falling from 27,930 tons in the corresponding week of last year to 23,290 tons in the week just closed. At most of the pit heads there are considerable quantities to clear off, and in too many instances "binges" are accumulating which will take a quarter of a year to draw into consumption. Prices still in favour of buyers, with the exception of gas coal, which is in good demand at good prices.

Shipbuilding on the Clyde looks progressive, and although we have an occasional contraction or relinquishing of premises, on the whole, the Clyde shipyards are expanding. Cairds, of Greenock, are absorbing M'Nab's premises, and, altogether, the orders for the beginning of the year are numerous. During October, 14 vessels were launched on the Clyde, eight of which were iron sailing vessels, of 8630 tons; three were steamers of 3700 tons, and three were composite of 2450 tons. This week there were launched for the firm of Marc Fraissinet, Pere and Fils, of Marseilles, a magnificent screw steamer, named the *Africque*, of 315 feet in length, 37½ feet in breadth, 29½ feet in depth, and of 2130 tons British measurement. Her engines are of the high and low pressure make, and are of 230 horse power nominal. She is intended for the Marseilles and Alexandria trade, and is expected to attain a high rate of speed, with a small consumption of fuel. For Liverpool owners, there was also launched a handsome iron ship of 700 tons, named the *Gateside*, for the East India trade.

THE NORTH OF ENGLAND IRON AND COAL TRADES.

Middlesborough, Nov. 4.—The tone of the Iron Trade of the North of England is satisfactory, and a good deal of business is being done in most departments. Enquiries for rails are increasingly numerous, and, besides, the foreign specifications now in the market, English and Scotch railway companies are also inviting tenders for iron material for renewals and extensions. The Caledonian Railway Company are now seeking offers for the supply of 12,000 tons of malleable iron, and 500 tons of Bessemer steel rails, together with a quantity of fastenings, 400 tons of fish plates, and 5000 tons chairs. There are, it is reported, several enquiries now out for rails, a share of which will, doubtless, fall into the hands of makers in the North. Plate orders are pretty plentiful, and there appears a fair prospect of a good trade for plate makers for some time to come. Iron is rapidly superseding wood in shipbuilding, both in vessels of heavy and light tonnage, and the builders on the Tyne, Wear, and Tees are generally well occupied, and pressing for deliveries of plates, the prices for which have somewhat improved lately. Angle iron prices are also better, and orders for bars are more plentiful. Foundry work is, in most instances, reported to be slack—i.e., in new orders. Some foundries are making fair time, but others complain.

At the market here, yesterday, there was evidently a buoyancy in the Pig Iron Trade; the improved prices are generally well maintained, and are—49*s.* 6*d.* No. 1, 45*s.* 6*d.* No. 3, 44*s.* 6*d.* No. 4, on trucks at the works or on the Tees. There are two or three makers who are not very largely sold, and were tempted to accept 6*d.* 1*s.* than these rates for heavy quantities, but sellers, generally, have their order books well filled for the present quarter, and a good way into next year, and are disinclined to receive commands, except at full prices. Several large orders were placed at yesterday's market, which closed

firm. The boisterous weather still continues, and greatly interferes with shipping. Vessels are very scarce, and, consequently, the deliveries of pig to the Continent have not been very heavy of late. Serious complaints are being continually made against the railway company here for the insufficiency of trucks for the conveyance of inland orders, which prevents makers fulfilling their contracts. This interference with deliveries, and the scarcity of vessels during the greater part of last month, may tend possibly to increase the total stock. The make generally has been well kept up during the time. However, the official returns, which will most probably be issued in the course of a few days, will settle any anxiety in this respect. The demand for pig-iron continues to be very good, and those who awhile ago anticipated a fall in prices find themselves deceived, and are now compelled to place orders much above figures at which they could be done two or three months ago. The warrant store stock shows a further, though slight, reduction this week, being posted yesterday at 37,632 tons. Warrants are quoted at 44s. 6d. cash.

An effort is being put forth in this district for establishing a banking company, and we hear the project is meeting with support from those who are likely to be able to carry it to an issue. A draft prospectus has, we understand, been prepared, and the arrangements are so far satisfactory.

We understand that Messrs. Bolekow, Vaughan, and Co. have let the sinking of the two pits they are about to put down to the Salt-bed, which they have already proved, and we may, therefore, suppose the operations will be speedily commenced. It will, of course, be some considerable time before the deposit can be reached, but in the interim all interested in the welfare of Cleveland will anxiously wait the opening out of a new industry in this already important district.

The Coal and Coke Trades are both improving, and prices are getting up a little. Shipments have been, of course, checked considerably of late; notwithstanding this the pits are all making better time.

A handsome Map of the North-Eastern Iron and Coal District has just been published by Mr. C. E. Muller, iron merchant and steamship owner, of Middlesborough-on-Tees. It embraces the entire district, from Whitby on the east to Barnard Castle and Stanhope on the west; and from Glaisdale and the River Tees on the south to Blyth on the north—thus including the Tyne, the Wear, and the Tees districts. The map is geologically coloured, to show the limits of the coal and of the ironstone districts; and the blast-furnaces and rolling mills are carefully indicated. The estuary of the Tees is also shown upon an enlarged scale, showing the position and colour of the various lights which serve as guides for entering the harbour. The enlarged plan, which is on a scale of 1 inch to the mile (twice that of the principal plan), shows the low-water channel from Newport to the sea, and affords ample information for those trading with the port. The map is well worthy of a place in the counting-house of every iron work in the district.

TRADE OF THE TYNE AND WEAR.

Nov. 4.—The commerce of the two rivers has been much obstructed by the very boisterous weather which has prevailed lately, and it is lamentable to notice the great loss that has occurred both of life and property. And although old and small sailing ships have suffered to some extent, yet the loss has not been confined to this class of vessels, many good vessels, and some of them steamers, having suffered. The reason given for this is that the masters and owners of steamers are getting reckless, and run their vessels in spite of the most dreadful weather, and thus often come to grief.

The iron yards and iron shipbuilding yards continue to prosper, and although the Coal and Coke Trades are generally improving, yet at some of the works much slackness has been experienced lately; this has, no doubt, been partly owing to the rough weather at sea, which has obstructed seriously the shipping. Some of the works send coals by rail to London, but this is not general, though if it proves profitable in one instance there can be no reason why it should not be more generally adopted. At the extensive colliery at Usworth, situated only seven miles south of the Tyne, 600 tons of coal is sent by rail to London daily, so that the works are in a great measure independent of transit by sea. And, as remarked above, there appears to be no reason why the quantity of coal sent by rail should not be largely increased.

The progress at the Hebburn Colliery has been pretty good lately, and the High Main seam has been passed at one of the shafts, the supply remaining good at this particular shaft. We expect to give further particulars respecting this important undertaking next week.

The Iron Trade continues to improve, and prices are stiffer; a further rise is expected to take place shortly. As the demand for rails and bridges on Russian account is known to be very large for next year, there is now no apprehension that the iron trade will fail to advance for some time to come.

Most important experiments were conducted at the Usworth Colliery, on Thursday, to test the capabilities of an apparatus invented by Mr. S. P. Bidder for bringing down coal instead of by gunpowder. A description of the mechanical arrangements connected with the machine is appended; the invention appears to be one of great importance, and the results expected to be obtained from it are well worthy the careful attention of all connected with coal mines. If it proves successful, and is found capable of bringing down the coal in all, or the majority of, cases there is no further necessity for the use of gunpowder, and in fiery mines this will increase very much the safety of the miner, and, of course, will tend to the decrease of explosions of gas. The experiments on Thursday were so far perfectly successful: a length of 19 yards having been curved or holed underneath in the usual way, holes 3 inches in diameter, and 10 ft. apart, were bored into the coal, and the hydraulic apparatus brought down the coal in a very short time, and, what is most important, the coal is brought down in large blocks. In addition to the safety secured by this admirable invention from explosions of gas, its adoption will have a very important effect on the commercial value of coal, as it is well known that the use of powder for blasting breaks the coal very much, and also discolours it, and thus depreciates its market value. By the use of this hydraulic wedge the coal can be got in larger blocks, and will be sent to market free from discolouration, and much less small will be made also than formerly, so that the value of a seam of coal will be materially increased, and both masters and men much benefited by Mr. Bidder's invention. The experimental trial was conducted in the presence of Mr. J. J. Atkinson, Her Majesty's Inspector of Mines for South Durham; Mr. G. W. Southern, Her Majesty's Inspector of Mines for Northumberland; Mr. Alfred Palmer, Wardley; Mr. J. Atkinson, Chilton Moor; Mr. W. Leishman, Bunker's Hill; Mr. Bidder, and Mr. S. B. Coxon, the engineer to the colliery. It may be added that the machine, although new to this district, was tested in Staffordshire about a year ago, at the Harecastle Collieries, where 90 men were recently killed by explosion; the Shipley Colliery, and the Haydock Mine, where the recent dreadful accident occurred. In each of these cases its success was pronounced unequivocal; and we understand that an experiment was lately made with it at the well-known Talk-o'-the-Hill Colliery by order of the Home Secretary, when its performances were equally gratifying. Indeed, there is every probability that reference will be made to Mr. Bidder's invention as a means of preventing accidents in future legislation on the subject.

Light without flame being, unquestionably, a desideratum in connection with the illumination of collieries, considerable interest will attach to the practical trials to be made in a colliery with Messrs. Church and Co.'s improved lamp, experiments with which were publicly made by Mr. Temple, at the Queen's Hotel, Newcastle, on Tuesday. The lamp shows no visible flame, yet gives a pure and brilliant light, by which delicate colours can be distinguished as in daylight.

A very serious boiler explosion occurred at Sherburn, at one of the collieries of Earl Durham, on Tuesday. It appears that there are four boilers, and connected with them a winding engine; and on the morning in question the boiler nearest the engine exploded, and blew up with great force. The main steam-pipe connecting the boilers with the engine-cylinder was broken, and the steam escaped into the engine-house with great force, severely scalding the engine-man, Holmes. He was also much injured by flying bricks and stones, but his ultimate recovery is expected. One of the firemen was also much injured by the scalding steam and bricks, but the other man escaped unharmed.

A general meeting of the North of England Institute of Mining Engineers will be held on Saturday, when a large gathering of members and others may be expected. The newly-elected President is to deliver his inaugural address, which will, there is no doubt, possess much interest: and Mr. A. L.

Stevenson will give a description of Davies' coal-cutting and weighing apparatus. A full report will be given in the Journal of next week.

DESCRIPTION OF MR. BIDDER'S COAL-CUTTING MACHINE.

The following is a description of the machine alluded to:—The drilling apparatus consists of a screw, 4 ft. by 1½ in. in diameter, to the end of which is attached the drill. The fulcrum for taking the resistance of the screw, is obtained by inserting a bar of iron in the coal at the side of the place selected for the hole which the machine has to drill. This small aperture is made by punching with the ordinary instrument a hole 10 in. deep and 1 in. in diameter, and the time occupied in making this preparation is usually about four minutes. The small bar for taking the resistance of the screw is then inserted, and it may either be fixed at the side or in the face of the coal, as the case may require. For the thin seams of the North this apparatus is replaced by a post, which is made fast by means of the screw between the roof and the floor of the mine. The screw is then adjusted to this bar or post, and the drill driven into the coal by a man turning the handle at the end of the screw. The time occupied in drilling this hole for the machine—3 in. in diameter and 2½ ft. deep—is from 10 to 15 minutes, according to the hardness of the strata, and if it is necessary to drill the hole in such a position that the rotary motion of the handle by which the screw is propelled cannot be obtained, a ratchet brace may be used, so that under any circumstances no difficulty can be felt in procuring the required motion.

The principal machine consists of a small hydraulic press, weighing about 70 tons, and of 25 tons power. To this press is attached a pair of steel tension-straps, and in the form of a tuning-fork, and which are connected with the press by a collar. At the end of these straps is first a clearance-box, about 4 in. long, and upon each side of the straps expanding pieces (also made of steel), which exert a pressure at the side of the hole of 125 tons, and are 15 in. long. The points of a pair of twin-wedges, 15 in. by 3 in., constituting one wedge, are then inserted in the expanding piece, and the machine is fixed in the hole. The hydraulic press, charged with about three pints of water, which may be used over and over again without loss, is then worked by a man by means of a small handle, and the ram from the cylinder is forced out, thus driving up the pair of wedges between the expanding pieces, giving a lateral expansion of about 3 in. This not being in all cases sufficient to bring down the coal, the press is withdrawn, and the relief-valve opened, thereby allowing the water to return to the reservoir. A second wedge is then inserted between the two twin-wedges by means of a small rod ¾ in. in diameter, and the press being again connected the wedge is driven home in the manner before described. By this means an additional expansion of 3 in. is obtained, making a total expansion of 6 in., which, in most cases, is found sufficient; but a third wedge can be inserted, if necessary, and the expansion thus increased to any reasonable extent. In this manner as much as 10 or 12 tons of coal have been brought down in 10 minutes. The machine is now in operation in Harecastle Colliery, Staffordshire, in Hammer Colliery, North Wales, and several other places, in all of which it has given satisfaction. The mode of using it is to provide each set of colliers with a pair of steel tension-straps, which, being inserted in the drills instead of powder, are operated upon by a man who carried the press in his arms from one working to another, exactly in the same way as a man now travels from "bord" to "bord" for the purpose of firing the shot.

Mr. Bidder claims for his invention the power to prevent explosions almost entirely; and as he asserts it will do more work at a less cost than can now be accomplished by hewing and blasting, he ventures to predict that the use of powder will in a short time be prohibited from all dangerous seams. It does not at all interfere with the occupation of the hewer, except to save him from harm, and to get out the coals in pieces much larger than could be secured after a blast, and hence the miners of the North will have reason to thank Mr. Bidder for his exertions on their behalf.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Nov. 4.—The Wages Question has monopolised attention in both ironmaking districts of the county during the week, and the concession made by the Ironmasters' Association on Thursday of an advance of 6d. per ton to puddlers has not been accepted with satisfaction by the millmen, who are naturally anxious to preserve the advantage which it is on all hands stated that they have acquired during late years. At a meeting at Wednesbury, on Monday, which was, however, not so largely attended as some previous ones, there was a strong protest against what was termed an attempt to introduce division amongst the various classes of ironworkers. Mr. F. Smith, agent of the Earl of Dudley, has issued circulars announcing that the prices of iron at the Round Oak Works will be advanced 10s. a ton. Again, in North Staffordshire, at a meeting held on Tuesday, the ironmasters resolved to advance prices 10s. per ton, and to raise puddlers' wages 6d. per ton, and millmen's 5 per cent., or half the amount asked. They, therefore, do not adopt the rectification of the scale which Mr. Williams has carried out at the Patent Shaft and Axle Tree Works, at Wednesbury, by giving the puddlers an advance without any corresponding increase for the millmen. The result is that a second special meeting of the South Staffordshire Ironmasters was held at Birmingham, to-day, called by the Chairman for the year, Mr. Walter Williams, when there was considerable discussion, but it was at length decided to take a bold course, and a resolution was adopted to raise prices 12. per ton, making bars 8s.; to raise puddlers 1s. a ton, that is 6d. in addition to 1s. 6d. agreed to be given last week, making 8s. 6d.; and to advance millmen 10 per cent. This alters everything. It restores the relative proportions of pay to puddlers and millmen to the old scale, and it doubles the advance in prices decided upon in North Staffordshire, and by Lord Dudley's agent. It remains to be seen how it will affect the demand, on which everything must turn. Wages in South Staffordshire will now be higher than in other districts. The course to be pursued elsewhere by the men will be looked to with interest. It is hardly likely they will be satisfied with less than is to be given in this district, and in South Wales especially, where wages are very low, pressure for an advance is almost sure to take place. Should the trade fall off, the advance will try the smaller makers with limited capital.

Dr. Alfred Hill, of Birmingham, has delivered his third lecture in connection with the Institute of Mining Engineers (whose headquarters are at Dudley) at Walsall, on Tuesday, Mr. D. Peacock, the President of the Institute, occupying the chair. Dr. Hill gave a very comprehensive and clear account of the constitution of atmospheric air, and of the dangerous gases evolved in coal mines, and pointed out the special sources of danger in mining operations. He also offered advice in case of accidents, and gave a very interesting and useful lecture, which was highly appreciated by the audience.

The Wedgwood Free Library and Museum, at Burslem, in North Staffordshire, has been opened under the provisions of the Free Libraries Act, which has also been adopted at Wolverhampton.

There has been an explosion of gas at one of the pits of the Ubbesley Colliery Company, at Bucknall, near Hanley, by which four men have been seriously burnt. The Ubbesley Colliery was formerly noted for the number of accidents happening therein; but under the present management, which has extended over several years, no accident has occurred there until Tuesday, when an explosion took place from some cause at present unaccountable, and the lives of the workpeople were placed in great peril. The four injured men, on being drawn from the pit, appeared unable to realise their position for some time, and one of them, who afterwards found that he was seriously burnt, persisted in walking home unaided, from fear of alarming his wife and family.

The Dudley Correspondent of the *Wolverhampton Chronicle* writes:—The Earl of Dudley's works, at the Round Oak, are so plentifully supplied with orders that Mr. Frederick Smith, the Earl's principal agent, purposes to advance the price of finished iron 10s. per ton upon any fresh order he may receive. Existing orders upon the books will be charged upon the old rates, and by the time these are worked off it is not unlikely that iron will go up at all the works 12. per ton, and then Mr. Smith will take care that his workmen shall receive the benefit of the advance. All that they have to do is to work harmoniously with him, which we believe, they are endeavouring to do, and they may depend upon it he will take care of their interests as well as those of the Earl of Dudley. The Round Oak iron has found its way into all the markets of the world; not only so, but under the present management it is certain to maintain its position as the increasing demand for it abundantly testifies. The enquiries for pig-iron made from the native ores of the district have become more numerous. Hot-blast, all mine iron, is realising from 32. 12s. 6d. to 32. 15s., and cold-blast from 42. 5s. to 42. 10s. per ton. Some fair pig, with a medium of fine cinder, is quoted from 21. 15s. to 21. per ton; grey forge cinder pigs, from 21. 12s. 6d. to 21. 17s. 6d. per ton; ordinary millers, Nos. 1, 2, and 3, from 21. 15s. to 21. 17s. 6d. per ton. That the iron trade in the district is showing more life is certain, and in order that there may be no collapse, great care must be taken by the masters not to force prices up beyond a legitimate standard. We have every confidence in the wisdom which past experience has taught them.

THE COAL-WEIGHING QUESTION.—Whilst the subject of imperial or statute weight for coal is under discussion, it may not be uninteresting to refer to some very trite remarks upon the subject in a paper read by Mr. Henry Johnson, mining engineer, before the North of England Institute of Mining Engineers, at their meeting held in Birmingham so long back as July, 1861, nearly nine years ago. The author then said upon the subject of the produce of thick coal per acre, "The almost innumerable circumstances which control and govern the yield per acre, and the proportions of coals, lumps, and slack are a complete bar to the laying down of any reliable data by which an accurate account of the produce per acre can be obtained. The ton weight of coals in this district is a complete misnomer. There is no such thing. There is a something which is entered in the sale books, and paid for as a ton; it is a 'parcel,' not a ton, but a parcel containing a ton proper and about one-third of another ton. Before estimating the produce per acre of the thick coal of a

colliery, it will be necessary to ask some of the following questions:—Does the coalmaster load Birmingham or other country dealers' boats? If he does he must suffer in the weight, because many of them can afford to retail the coals after hauling them eight miles at less prices than they cost them at the pit. * Does the master supply his own iron works? If he does the manager will have a very big ton if he can. * * * The author adds, "I can venture no further than to say that the produce of our thick coal ranges in the first working from 12,000 to 20,000 tons (or rather parcels) per statute acre, and I would they were 'statute' tons also." So much for what was said on the subject nine years ago, and the author has lived to see the change he then advocated carried out; and, judging from the nature of the correspondence which has recently passed through our columns, Mr. Johnson's estimate of the average over-weight of "one-third" is not very wide of the mark. * * * The difference between the unknown weight formerly sold and the statute weight of 2240 lbs. to the ton now being weighed into boat. In the same pamphlet there are some valuable remarks upon a more economical mode of working the thick coal, with suggestions for cheapening the cost of labour, and increasing the proportions of large coals, which, we believe, has been put into practice with great advantage. We shall refer to this portion of the pamphlet more fully.—*Birmingham Gazette*.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Nov. 4.—The Iron and Coal Trades of Derbyshire have improved considerably of late, so that there is more activity both in the northern and southern districts than there has been for some time. The foundries are now doing a tolerably good business, whilst makers of rails, bars, and other qualities of manufactured iron, are favourably off. The make of pig-iron is still large, nearly all the furnaces continuing in blast—a fact in itself tending to show unmistakably that so far as iron is concerned there is a favourable demand, although it may be that stocks are tolerably large. At Staveley, whilst passing a day or two since, we noticed that the four furnaces were going, as were those also at Remshaw, from the latter of which Mr. Appleby is now making a branch line on to the Midland Main Railway. On the Erewash Valley Railway where are some of the largest works in the county, there is more activity than there has been, and a good deal of iron is being made, whilst the puddlers are said to be more fully employed than during the summer months, during which full work was not by any means the rule. There has been an increased demand for house coal for the London market, and the winter trade may now be said to have fully commenced. From Clay Cross, as usual, a very large tonnage is being forwarded there, and also as far as Brighton, From Ekeington, Pinxton, Riddings, Staveley, and other places as well, a good deal is being sent to the South. The Burton-on-Trent collieries have improved their out-put of late, having a fair local sale, as well as sending to the West of England as far as Brighton. The steam coal trade has kept up so far very well, but the time has now arrived, or nearly so, when a falling off may be looked for so far as regards the exports from the Yorkshire ports. It is gratifying to be able to state that the efforts made by the proprietors and managers of several of the principal establishments in the county to establish schools for technical education have been well appreciated by those they were intended to benefit, and that the classes already formed have been well attended.

The iron works in the South Yorkshire district are now doing a very good trade, there being good orders on hand for most descriptions of iron, including rails, plates, sheets, and bars. At Milton and Elsecar all branches are kept actively going, and the same may be said with regard to most of those in the Rotherham district, although some descriptions of foundry-work are not particularly active. There has been a decided improvement in the demand for House Coal for the metropolis, as well as for other localities, and there has also been a slight increase in prices. The closing of the Baltic being now looked forward to, shippers have been desirous of sending off as much steam coal as they possibly could before that event takes place. The storm during the week, however, has very seriously interrupted the dispatch of cargoes and the laying on of vessels to take the place of those out-going. Several vessels have been unable to make Hull and Grimsby, whilst others have suffered injuries which do not admit of their taking in cargoes before repairing. To Goole rather more is being sent than for some time past, and several vessels have sailed during the week for the home ports. There is no change with regard to the business in engine coal doing with Lancashire, and which, in the present state of the cotton districts, shows no symptoms whatever of improvement. Coke is in good demand, a large quantity being forwarded into Lincolnshire for the use of the furnaces there. At the High Still Colliery, Barnsley, which was sealed up about a month ago, owing to a fire having taken place near to the cupola, and which could not be put out by ordinary means, there has been no change. It is, however, expected that in the course of a few days an effort will be made to re-open it—or partially so, at least—with a view to ascertain whether the fire has been extinguished by the exclusion of the air. At the collieries where the men have been on strike, so far there has been no change, but it is expected that the late workmen of Mr. Clarke, of the Sovereign Silkestone Colliery, will shortly resume work. During the past week several meetings have been held, and Mr. Normansell has addressed them. At one of the latest it was stated that the men would only go in on the terms on which they struck, whilst, on the other hand, Mr. Clarke has more than once stated that such terms he cannot accept. On Tuesday evening a deputation from the body of the men waited upon Mr. W. S. Stanhope, one of the candidates for the representation of the division at the last election, and asked him to act as mediator in bringing the dispute to a close. This he agreed to, but whether his efforts will be successful or not remains to be seen.

MIDLAND INSTITUTE OF MINING ENGINEERS.

The monthly meeting of this institute was held on Tuesday, in the rooms at Barnsley. Amongst those present were—Mr. Embleton, President; Mr. P. Cooper, the Holmes Colliery; Mr. Miller, Stafford Main; Mr. Lupton, Chesterfield; Mr. Maddison, Woolley; Mr. Chambers, Chapeltown and Thornecliffe; Mr. Hodgson, Normanton; Mr. Kell, Barnsley; Mr. W. Lawton, Barnsley; Mr. J. Wilson, Darfield Main; Mr. Beaumont, Mr. Minto, and Mr. Barker, the Oaks Colliery; Mr. Hunter, Crigglestone; Mr. Mosby, Thornecliffe; Mr. Mammatt (secretary), &c.

The chair was occupied by Mr. Embleton, and after some preliminary business the members proceeded to the discussion of the paper read by Mr. A. Lupton, in August last, "On the Use of Hydraulic Machines for Breaking Down Coal." On first introducing the subject Mr. Lupton, with the aid of a number of diagrams, gave the results of several experiments which he made for the purpose of testing the value of the hydraulic machines, including those of Mr. Grafton Jones, Mr. Bidder, and Mr. Chubb. The machine of Mr. Grafton Jones, the principle of which consists in driving a wedge by means of a hydraulic press between two blocks of steel, which are rendered incapable of any further lateral movement, by means of tension-bars connecting them with the press, was tested at the Shipley Colliery in Derbyshire, where the bad coal is worked on the long wall system in banks from 80 to 100 yards in length, the coal being 4 ft. 7 in. thick. As much work could be done by it and two men, Mr. Lupton said, in from two to three hours, and as much coal got, as would take two men by the ordinary method from one and a-half to two days. Mr. Bidder's machine was capable of giving any degree of expansion, and, in many instances, is similar to Mr. Jones's, as is also that of Mr. Chubb. The discussion on the paper was a very interesting one, and was taken part in by most of the members present. The great object in introducing such machines for getting coal in mines was stated to be, according to the views of those present, the getting of a maximum quantity of large coal at a minimum cost, and, by doing away with gunpowder, ensure the greater safety of the workmen. Such being the case, it was considered that every encouragement should be given to the inventors of mechanical power having for its object the getting of coal. The impression with regard to the machines noticed in the paper read was that they were as yet incomplete, but were capable of improvement to an extent at least to make their use desirable in many collieries instead of gunpowder, and for producing a larger coal generally.

It was stated by Mr. P. Cooper that one of the machines of Mr. Jones had been working at the Holmes Colliery, the closing experiment having been made on Friday last. The conclusion he had arrived at with regard to it was that it was well adapted for a colliery where gunpowder could not be used, but rather more expensive, taken altogether.

At the conclusion of this discussion a paper was read by Mr. Miller, of the Stafford Main Colliery, "On the Results of Different Methods of Getting Coal." Mr. Miller commenced by alluding to the fact that many of the details connected with the getting of coal, and of great importance so far as regarded the economical working of collieries, were but seldom brought forward or described in mining institutes, because it required continuous every-day observation to notice with accuracy the results of any system as they occurred; whilst those who were in a position to note them were not always able to convey them in the best manner through the medium of a publication or in discussion. Mr. Miller then proceeded to notice the various results of different methods of getting coal, and by reference to plans which he had prepared on a rather large scale, he pointed out the mode of working by the three principal systems adopted in Yorkshire, and gave the comparative results of each as to the produce of coal per acre, and the division of that produce into best coal and small or waste, noting, from particular cases obtained over a sufficiently long period to ensure correct data, that the same system which produced the best results in one seam of coal did not effect the same in another one. In proof of that position he gave an instance where

a seam, divided by a thick band of fire-clay, could not be worked but at great loss by a well-known method—hard and pillar working, whilst by the long wall system it worked easily, with ordinary skill and care. In the timbering, packing, &c. After alluding to the cost of working collieries, and referring to the particulars of leading, ventilation, and to liabilities to accumulations of gas, and freedom from accidents by those methods to which he had drawn attention. Mr. Miller proceeded to say that there were other systems which he had seen in operation, but was not prepared with sufficient data to dilate upon satisfactorily. He, however, urged upon those present who could bring forward accurate information, from continuous working results, to come forward and assist, by every means, in helping forward, as far as possible, the important question, so as to place it on a footing of comparative certainty, and to the profit of all persons engaged in mining pursuits. The opinion which he submitted to the Institute, from the conclusions he had come to, after mature consideration and practical deductions, was that, though a different or a modified system might be the best in certain conditions of the coal, roof, &c., yet that the long wall system had the greatest advantages in most instances over all others. He suggested that the characteristics of a face of coal in proper long wall working was its being, with the overlying roof, constantly detached, and so requiring but the method and ordinary skill to get well under the coal, after proper timbering and spragging, so as to ensure its falling freely, in most cases without resorting to blasting for that purpose.

Mr. Miller was complimented for the able and practical character of the paper, and for which he was accorded a cordial and unanimous vote of thanks. It was stated that Mr. P. Cooper would prepare a paper for still further elucidating those which had been read by Mr. Mammatt and Mr. Miller, and from all of which a highly interesting discussion at a future meeting is anticipated. The proceedings terminated with the usual vote of thanks to the Chairman.

REPORT FROM MONMOUTH AND SOUTH WALES.

Nov. 4.—It is satisfactory to note that in the home demand for Welsh iron there is still some perceptible improvement, principally on relating account, and it is expected that in a few weeks there will be some considerable movement in this branch of the trade, as quotations are now likely to have an upward tendency. Buyers will, therefore, lay hold of the opportunities they have at present of making their purchases, while rates remain as they are. More extensive reworking is looked forward to in the next few months, and as large quantities of rails must ultimately be required enquiries will, no doubt, be immediate and increasing, and a brisk business might, consequently, be reasonably looked forward to shortly. More and more vitality is evinced in the trade on foreign account. Especially in the rail branch there is a brisk business doing, and so well off are makers for orders that but little attention is paid by them to the other branches of the trade, the prices obtained for rails being so much more remunerative than there are for other descriptions. The workmen still remain quiet with regard to the wages question, trusting, no doubt, that when the proper time comes they will not be forgotten. The expectation of a rise in their wages is, of course, becoming more rife, and shortly, in all probability, the same will be fulfilled. Nothing, however, has hitherto been done in the matter by the masters, but a course which may be regarded as equivalent to an advance has been adopted by them. In some of the works the employers have offered premiums to their hands for constancy at work, and for good make, which at least shows a desire on the part of the makers to reward their industrious and steady hands. Offers of fresh contracts are now more numerous than they have been for some time, and further orders might be secured, but as there is no anxiety felt as to tolerably full employment during the winter months makers are inclined to hesitate in accepting engagements, having no doubt in their minds but that quotations will shortly go up. It has already been reported that an advance of about 10s. per ton in the price of iron will take place in other districts, and though the circumstance has yet had no effect in this district, its influence will not be lost in the market generally.

In Pig-Iron the markets still seem to be more firm. Bars are in small request. In Tin-Plates there is no alteration, enquiries continuing inconsiderable.

The aspect of the Steam Coal Trade is pretty nearly the same as reported last week, though the feeling in the trade may be regarded as firmer. From the Italian and French markets there is a slight improvement in enquiries, and to several of the distant mail packet companies' stations the clearances are in excess of what they were at the corresponding period of last year. A favourable effect has been produced by the reduction of Spanish dues upon coal, and it will, probably, be the means of bringing about increased transactions with that country. Coastwise the house coal trade exhibits some vitality, owing chiefly to the cold weather now prevailing, and it having induced coasting buyers to purchase more freely. Local consumption has increased considerably. Coke is in good request, chiefly for the Staffordshire iron works.

The litigation between the Penarth Railway and Dock Company and their first contractors, Smith, Knight, and Co., is likely to be soon settled. Mr. Macnamara has been appointed arbitrator of all questions in dispute, and he has been sitting at Cardiff for several days taking evidence, with Mr. Bateman, C.E., as his assessor. Mr. Field, Q.C., and Mr. Bidder, represented the Penarth Company, and Mr. Quain, Q.C., and Mr. Phillbrick, the liquidators of the contractors' estate.

The Brynmawr and Blaenavon line has been opened for mineral traffic. The London and North-Western Company will by this line be enabled to have direct and independent access to the important works of the Blaenavon Company, and the distance to Liverpool, Manchester, and the Midland districts will be considerably reduced, as compared with the present route, by way of Pontypool Road.

Swansea is about to have the benefit of the entire transfer of the business of the Cheltenham and Swansea Wagon Company. The directors have given notice announcing the sale of the plant, stock, &c., at Cheltenham, preparatory to the removal of the company to Swansea. With the commodious and well situated works which the company possess at Swansea, it is believed they will be able to secure sufficient business to keep them in regular employ, and at the same time realise fair profits to the shareholders, who have hitherto been singularly unfortunate in their investment.

A youth named John Thomas was charged before Mr. Fowler, at Merthyr, with infringing the rules of the Gethin Colliery, by having his lamp open on the lobby side of the lamp station. Defendant said he opened the lamp with two horse-nails. Mr. Fowler sentenced him to one month's imprisonment.

The Glandou Colliery, Fleur-de-lis, which has been at a standstill since the strike in the early part of last year, has again commenced working. An important case has been heard before the Pontypool magistrates. Mr. William Richards, colliery proprietor, was summoned at the instance of a delegate, named Halliday, for paying his workmen in a public-house, contrary to the 23 and 24 Vict., cap. 51, clause 28. Mr. Greenway, for the defendant, promised not to offend again, and the case was withdrawn.

A NEW SUBSTANCE.—In a paper addressed to the Academy of Sciences, M. Almé Girard announces the discovery of a new organic substance, which he calls *purpuro-galline*, which is obtained by subjecting pyrogallollic acid to the influence of an acidified oxidising compound. Purpuro-galline is but slightly soluble in water; much more so in alcohol, ether, and benzene, and in most acids. The nitric will attack it with violence, and, if monohydrated, will convert it into picric acid. In contact with potash or ammonia the new substance becomes blue, and after a few minutes green, then yellow. It dyes stuffs very powerfully, but the colours are not very bright; iron mordants give black and brown, aluminous mordants red and yellowish.

S. and T. GILBERT'S large and well-selected stock offers every facility for the choice of books. It comprises standard works, juvenile literature, books of a light and amusing character, with an elegant assortment of bound tomes; a combination suitable for every purpose of selection. The establishment, as a trade in books, openly and direct, enables them to continue to allow a liberal ready money discount off the published price of all new unreduced books, and for the convenience of book buyers generally, catalogues of the most valuable and popular works of the day are occasionally compiled and sent post free on application. Their show rooms, well stored with books of the nature described, are always open to view. Every book sold is the same as issued by the publisher, the discount, it must be understood, not being allowed in consequence of any imperfection. Shipping and export orders are estimated for on special terms, and enquiries made for second-hand, old, and scarce books free of charge. Copyright sheet music is obtained and supplied at half price and sent postage free for cash. S. and T. Gilbert have also devoted much study for many years to bookbinding, and in this branch of business great care is bestowed, and appropriate taste displayed in the production of work, strong in character, and modern in design, by skilled workmen and the use of good lasting materials. Estimates given. The attention of book buyers, secretaries of book societies, librarians, families, and others is kindly solicited. Catalogues now in preparation, forwarded when ready, gratis and post free, on application.—S. and T. GILBERT, Booksellers, &c., 4, Copthall-buildings, back of the Bank of England, London, E.C. [Please write for catalogues.]

THE NEW VADE MECUM (invented and manufactured by Charles H. Vincent, optician, of 23, Windsor-street, Liverpool) consists of a telescope well adapted for tourists, &c., to which is added an excellent microscope of great power and first-class definition, quite equal to others sold at ten times the price. Wonderful as it may seem, the price of this ingenious combination is only 3s. 6d., and Mr. Vincent sends it (carriage free) anywhere, with printed directions, upon receipt of Post Office order, or stamps, to the amount of 3s. 10d.

HOLLOWAY'S PILLS.—General debility and lowness of spirits are the consequences of dyspepsia or indigestion. The pills renovate the digestive powers, purify the blood, and give strength to the whole system. Sufferings of the body and depression of the mind are succeeded by cheerful activity of the physical and mental functions. Indigestion is the parent of so many evils, and is so common, so almost universal a complaint, that it is a great blessing that such a remedy as this invaluable medicine should have been discovered. No one need long suffer from indigestion with these pills at hand, and guided in their administration by the directions accompanying them.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN THE MATTER OF THE COMPANIES ACT, 1862, and of the PROSPER UNITED MINING COMPANY.—The Registrar of this Court has appointed MONDAY, the 8th day of November next, at Eleven o'clock in the forenoon, at the Registrar's Office, Truro, to SETTLE THE LIST OF CONTRIBUTORIES OF THE ABOVE-NAMED COMPANY, now made out and deposited at the said office.

FREDERICK MARSHALL, Registrar of the said Court. Dated the 28th day of October, 1869.

Under the Companies Act, 1862.

VALUABLE COLLIERY LEASE. LARGE QUANTITY OF PLANT, SEVERAL STEAM ENGINES FOR WINDING AND PUMPING, 20-TON WEIGHBRIDGE, by Kitchin, RAILWAY BRANCHES, WOODEN AND GALVANISED BUILDINGS, and numerous miscellaneous articles of the WYNN HALL COLLIERY, RUABON.

MESSRS. CHURTON AND ELPICK are instructed by the Liquidators TO SUBMIT TO PUBLIC COMPETITION, at the Queen Hotel, Railway Station, Chester, on Saturday, the 6th of November next, at Three o'clock in the afternoon, in Open Lot, and subject to such conditions as will then and there be produced, the BENEFICIAL INTEREST OF THE LESSEES in the **WYNN HALL COLLIERY,**

In work up to the 9th ult., with all the WINDING, PUMPING, and DONKEY ENGINES; FIVE LARGE BOILERS; pit heads and pulleys; screens and trip-plates; complete sets of 8 in. and 11 in. pumps; 20-ton railway weighbridge, by Kitchin; and other weighing machines; powerful capstan winch; several hundred yards of railway branches, with numerous points and crossings; about 100 tons of pit rails and plates; large quantity of hatches; various wooden and galvanised buildings, and roofed stages; and numerous other articles of plant appertaining to the colliery. Also, the tenants' interest in 116 10-ton trucks.

The fullest particulars can be obtained on application at the colliery, where the working plans of the coal can be seen, and the unworked area of Best Ruabon Yard, Wall and Bench, and other seams shown; and complete information given as to the cause of the very recent cessation of work by the present tenants.

The lessor is prepared to grant a lease to the buyer with the usual covenants at the very low royalty of 4½d. per ton.

Apply to Messrs. RYLAND and MARTINEAU, Solicitors, Birmingham; JOHN JAMES, Esq., Solicitor, Wrexham; or the Auctioneers, Chester; or at the Colliery Office, near Ruabon Station.

CARNARVONSHIRE.

IN THE MATTER OF THE GARREG FAWR SLATE AND MINERAL COMPANY (LIMITED). **IN LIQUIDATION.**

SALE OF A MOST DESIRABLE FREEHOLD ESTATE, Comprising 430 A. 0 R. 15 P., including a valuable and very extensively opened SLATE QUARRY, and SEAMS OF IRON ORE, with a sheepwalk extending over 700 acres.

MR. W. DEW WILL SELL, BY AUCTION, at the Sportsman Hotel, Carnarvon, on Saturday, November 13th, 1869, at Two o'clock in the afternoon (subject to conditions then and there to be produced), the

GARREG FAWR ESTATE, Situate in the parish of LLANBELLIG, distant about four miles from CARNARVON, on the Beddgelert Road, and about one and a half mile from the Quellyn Lake, and contains by admeasurement 430 A. 0 R. 15 P. of FREEHOLD arable and pasture LAND, together with the right of an extensive sheep walk; a recently-built FARM HOUSE, COTTAGES, and BUILDINGS, and all let to respectable and industrious tenants. It includes also a large VEIN OF SLATE ROCKS which has been extensively opened out at a large outlay, which has fully borne out the fact that it forms part of the great vein running from the far-famed Penrhyn Quarries, through the Llanberis Quarries to the Nantlle Vale.

There is also a valuable and rich VEIN OF IRON ORE, which has also been worked and shipped in large quantities, it contains as much as 67 per cent. of peroxide and protoxide of iron, and has yielded upwards of 50 per cent. of iron. This very desirable property is situated near to the populous and rapidly increasing district of Wynnau, and the Quarries of Llanberis, and a large portion would at once be taken in building sites. It commands a most charming view of the well-known Bettws Garmon Valley, as well as a fine sea view. The purchaser to have the option of taking the tram rails, wagons, &c., at a valuation.

Plans and particulars of which may be had at the principal hotels in North Wales; of Mr. JOHN HUGHES, the Liquidator, 19, Craven-street, London, W.C.; and from the Auctioneer, Wellfield House, Bangor.

BY ORDER OF LIQUIDATORS.—SPAIN.

The THREE VALUABLE FREEHOLD COPPER AND SULPHUR MINES, known as Lapilla, Companario, and Evidencia, the property of the Lapilla Pyrites Company (Limited), together with the PLANT and MACHINERY, and cottages for about 200 miners, advantageously situated in the province of HUELVA, SPAIN, within easy distances of the important port of Huelva, near to Tharsis Mine and Tharsis Railway; also upwards of 3000 tons of ore now lying on the banks of the Lapilla Mine.

MESSRS. DEBENHAM, TEWSON, AND FARMER WILL SELL, BY AUCTION, at the Mart, near the Bank of England, in the City of London, on Tuesday, November 30, at Two o'clock, the desirable and valuable FREEHOLD MINES, known as

LAPILLA, COMPANARIO, AND EVIDENCIA, Situate in the province of HUELVA, SPAIN. They have been fully opened, and preparations have been made for carrying on operations on an extensive scale. Upwards of 1,000 tons of the mineral have been supplied to large manufacturing firms in England, who are willing to bear testimony as to its value; also upwards of 3000 tons of pyrites ore.

Particulars, with conditions of sale, may be obtained of Messrs. LEWIS, MUNN, NUNN, and LONGDEN, Solicitors, 8, Old Jewry; and of the Auctioneers, 80, Chapside, London.

WITHOUT RESERVE.

VALUABLE SLATE QUARRY IN CARNARVONSHIRE, Together with the whole of the MACHINERY, PLANT, TOOLS, STOCK IN TRADE, and EFFECTS.

MESSRS. VENTOM, BULL, AND LUCAS are instructed by the Liquidators TO SELL, BY AUCTION, at the Mart, Tokenhouse-yard, on Friday, November 12, at One o'clock,

THE ALEXANDRA SLATE QUARRY, Situate on Moeltryon Mountain, in the parishes of Llanwnda and Llandudog, about five miles from the town of CARNARVON.

The property extends over about 226 acres of land, with valuable veins of slate rock, and is leased from the Crown for a term of which 13 years remained unexpired on the 10th of October, at a royalty of 1-12th, the minimum royalty being £100 per annum. The quarry has been partially developed, and a large amount of capital and labour have been expended upon it, the whole benefits of which may be reaped by the purchaser at a small outlay.

The whole of the valuable machinery, plant, implements, tramways, trollies, barrows, and trucks, an inventory of which will be produced at the time of sale, will be included in the sale.

Particulars may be had of J. HENRY JOHNSON, Esq., Solicitor, 47, Lincoln's Inn-fields; at the Mart; and of the Auctioneers, 8, Bucklersbury, E.C.

On TUESDAY, NOVEMBER 23d, 1869.

Eleven o'clock in the forenoon.

At NORTH CHIVERTON MINE, About FIVE MILES NORTH OF TRURO.

MR. BURGESS is instructed TO OFFER FOR SALE, in One Lot, or Lots, as may be deemed expedient by the Auctioneer and the company's agents, viz.:

A bright 50 in. ENGINE, 10 ft. stroke in cylinder, 9 ft. in shaft; first piece of rod erected new about five years; and 11-ton BOILER, with fittings. 1 60 ft. shaft shears, oak caps; 1 54 ft. ditto ditto, deal caps. 200 fms. flat-roads, 8 in. x 6; plates; pulleys; fagotted main caps; all erected within the last 12 months. 2 8 arm capstans, oak axle; 150 fms. 12 in. rope, very good. 1 8 arm capstan; 150 fms. of 3/4 capstan chain. 120 fms. pitch blue rods, 9, 11 x 12 in. 300 fms. horse whim chain; 3 horse whims; horse whim kiddles. 160 fms. ladders; 130 fms. casing and dividing plank; 7 large wood sheds. A one horse crusher and gear complete.

WITHIN A LARGE AND LOFTY WOOD SHED, One large carpenter's shop and saw house; a quantity of flooring; strips; ties; tools, &c., and lead dressing; scales, beams, and weights. Large double crab winch; single, double, and treble blocks; large drop screw.

PITWORK. 120 fms. plunger and drawing lifts, bottom complete; 7, 11, 12, and 13 in. fagotted and hammered rod plates, bolts to match; sundry iron, steel, and wrought and cast iron.

Dated Barncoose, near Redruth, November 3, 1869.

SOUTH EXMOUTH MINE, HENNOCK, DEVON.

FOR SALE, BY PRIVATE CONTRACT, the following, viz.:

40 in. cylinder PUMPING ENGINE. 25 in. cylinder WHIM ENGINE, with CRUSHER attached. 60 fms. 11 and 12 in. U.M.P.s in shaft. 30 fms. 11 and 12 in. PUMPS at surface. Timber, and various useful mining materials.

Apply to Capt. JOHN CORNISH, Frank Mills Mine, Christow; or to Mr. J. O. HARRIS, Public Accountant, 2, Gandy-street, Exeter.

FOR SALE, IN NORWAY.

EXCELLENT NICKEL MINES, which are now so far advanced that the working of the same can be commenced forthwith, are OFFERED FOR SALE, on very advantageous terms.

The mines are situated in the best ever found in the country, and there being great facilities for transport, the working expenses will be considerably lessened.

As to information for price and conditions, apply to the British Consul, Stavanger, Norway, and letters for this gentleman, addressed to the care of Hald, Mathwin, and Co., 6, Billiter-street, London, E.C., will be forwarded immediately.

THE SANKEY BROOK COAL COMPANY (LIMITED).

IN LIQUIDATION.

TO BE SOLD, BY PUBLIC AUCTION, in One Lot, by Order of the Liquidators, unless disposed of previously by private treaty, of which due notice will be given, the VALUABLE LEASEHOLD AND FREEHOLD COAL MINES AND COLLIERIES, known as the

SANKEY BROOK AND ASHTON'S GREEN COLLIERIES, Now in full working operation, with the TRAMWAYS, LANDS, BUILDINGS, and APPURTENANCES belonging thereto, situate in the townships of PARR and SUTTON, near ST. HELENS, in the county of LANCASTER. The mines consist of the Potato Delf, the Karkby Delf, the St. Helens main Delf, the St. Helens Four Foot, the Ravenhead, Higher Delf, the Main Delf, the St. Sebastian Mine (otherwise the Bastions), the Sir Roger Mine (otherwise the Sir Roger de Coverley), the Sir John Mine (otherwise the Sir John), the Rushy Park Mine, and the Little Delf, lying and being under the lands shown in the plans, or some part thereof.

And the several Pits and Shafts, together with the Engines, Machinery, Pumps, Implements, Stock, Plant, Utensils, Fixtures, and Effects of every description (both above and below ground) used in connection with the same—from which mines upwards of 200,000 tons per annum have been gotten. And also certain Freehold Lands, Dwelling-houses, and Out-buildings, Cottages, Premises, and Appurtenances, situate in the townships of Parr and Sutton aforesaid, and containing respectively 13 A. 1 R. 23½ P., statute measure, and 3 A. 8 R. 5 P., Cheshire measure, or thereabouts; and also the Tenants' interest in certain Cottages at the collieries, and in the Company's Crown-street Coal Yard, Liverpool; also the Plant at Liverpool and in Birkenhead, Office Fixtures, &c. At the Raven Hotel, St. Helens, in the county of Lancaster, on Wednesday, the 10th day of November, 1869, at Three o'clock in the afternoon, subject to such conditions as will be then and there produced, by Messrs. LAMB and SONS.

For further particulars, application to be made to Mr. MASKELL PEACE, Solicitor, Wigan; and the Auctioneers, King-street, Wigan.

To view the collieries and premises, machinery, plant, &c., and to inspect the plans of the surface and workings, application to be made to Mr. T. THOMPSON, at the office of the colliery, at Parr, St. Helens, Lancashire.

TO BE SOLD, A MANGANESE MINE, situate in MERIONETHSHIRE. An extensive sett, in which two rich veins have recently been opened. Crushers, water-wheel, dressing-floors, and all necessary plant for working the mine. Thirty tons of ore (first produce) have been dressed, and is worth about £4 10s. per ton.

For particulars, and to treat, apply to Mr. A. H. MAURICE, Mining Engineer, Wrexham.

TO BE SOLD, A DIRECT-ACTING HIGH-PRESSURE PUMPING ENGINE, with cylinder, 70 in. diameter, and 9 ft. stroke, standing over the shaft, fitted with metallic piston, hammered iron piston rod, crosshead and coupling plates to main pump rod, cast iron slide bars and slide blocks, foundation beams, and holding down bolts. The valve box is fitted with two brass equilibrium valves and seatings, and two regulating valves. The valve gear is worked by tuppets and two cataract pumps, the steam pipes up to and including a steam stop valve, and the exhaust pipes up to and including a cast iron cistern for heating the feed water.

The main pumps consist of a 21 in. ram pump, about 125 yards in length, with brass clucks and leather lids; also a 17 in. ram pump, about 60 yards in length; and a bucket pump, 18 in. diameter, about 40 yards in length.

The main pump rod is of good pitch pine timber, about 14 in. square, jointed together with hammered iron plates and bolts.

The whole of the work was made by Mr. Robert Daglish, of St. Helens Foundry, and is in good working order, having only just stopped work from the water having been drawn off to another level, and may be seen any time on application at the Peasley Cross Colliery Office, St. Helens.

FOR SALE, cheap, a 25-horse power PORTABLE STEAM ENGINE, new, and with all recent improvements, guaranteed. FIRST-CLASS PORTABLES, 9-horse power, 12-horse power, and 14-horse power, which only consume 5 lbs. of coal per horse power per hour, on advantageous terms.

FOR SALE, SEVERAL SECONDHAND PORTABLE STEAM ENGINES, by eminent makers, in excellent condition. Also a MORTAR MILL. BARROWS AND STEWART, ENGINEERS, BANBUHY.

FOR SALE, THE UNDERMENTIONED ENGINES AND WATER WHEELS:

ONE 50 in. cylinder PUMPING ENGINE; with ONE BOILER. ONE 36 in. cylinder ROTARY STEAM ENGINE, 9 ft. stroke, with 10 ton BOILER, wrought-iron fly-wheel shaft, and 12 ton fly wheel. ONE 12 in. cylinder rotary STEAM ENGINE, with ONE 6 ton BOILER. Also, several Cornish CRUSHERS, of various sizes. For further information, apply to W. MATHEWS, Engineer, Tavistock. Tavistock, Aug. 17, 1869.

RHENISH PRUSSIA.

SEVERAL VALUABLE MINES FOR SALE,—LEAD COPPER, BLENDE, and IRON. The Mining Laws of Prussia give with the concession to work, an absolute right of property in the mine for ever, subject only to a royalty of 2 per cent. Apply to Mr. YOUNGHUSBAN, 6½, Wilhelm Strasse, Bonn-on-the-Rhine.

THE HENDREDDU SLAB QUARRY TO BE LET, on the ABERLEFENY VEIN, situated about three and a half miles from a railway station, in a very advantageous place to work. The sett contains about SEVEN or EIGHT HUNDRED ACRES, with water power to work a large number of machines. The quarry is sufficiently open to prove the quality of the rock and the regularity of the foot joints, which are good. Slabs of large dimensions are made, which can be seen. Apply to Mr. EDWARD DAVIES, Mawddwy Cottages, Dinas Mawddwy, Merionethshire.

TO BE LET, on royalty, a VALUABLE COALING PROPERTY, consisting of TWO HUNDRED AND FORTY ACRES, or thereabouts, situated at WARMBY, near BRISTOL, where there is a station now opened in connection with the New Midland Railway from Mangotsfield to Bath. The present colliery, consisting of two shafts, with winding and pumping engines thereto belonging, is situated within 100 yards of the above-mentioned station, and excellent coal, from the four veins, which have been partially worked, met with a ready sale in the neighbourhood previous to the completion of the new railway, which offers great facilities to the further development of the colliery. Apply to Messrs. STOKES and GOLDNEY, Clippenham; or JOHN TRENFIELD, Esq., Clipping Sodbury, Gloucestershire.

RAILWAY CARRIAGE COMPANY (LIMITED).

ESTABLISHED 1847. OLDBURY WORKS, NEAR BIRMINGHAM. MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, and EVERY DESCRIPTION OF IRONWORK.

Passenger carriages and wagons built, either for cash or for payment, over a period of years.

RAILWAY WAGONS FOR HIRE. CHIEF OFFICES,—OLDBURY WORKS, NEAR BIRMINGHAM. LONDON OFFICES,—7, GREAT WINCHESTER STREET BUILDINGS.

STAFFORDSHIRE WHEEL AND AXLE COMPANY (LIMITED).

MANUFACTURERS OF RAILWAY CARRIAGE, WAGON, and CONTRACTORS' WHEELS and AXLES, and other IRONWORK used in the CONSTRUCTION OF RAILWAY ROLLING STOCK.

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MANUFACTURE RAILWAY WAGONS OF EVERY DESCRIPTION, for HIRE and SALE, by immediate or deferred payments. They have also wagons for hire capable of carrying 6, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract, EDWARD FOWLER, Sec.

WAGON WORKS,—SMETHWICK, BIRMINGHAM. Loans received on Debenture; particulars on application.

WILLIAMS'S PERRAN FOUNDRY COMPANY, PERRANARWORTH, CORNWALL.

MANUFACTURERS OF STEAM PUMPING and EVERY OTHER KIND of ENGINES, together with BOILERS, PUMP CASTINGS, and MINING TOOLS of every description, of the very best quality. Estimates given for the supply of any amount of machinery.

London Agent.—Mr. EDWARD COOKE, 76, Old Broad-street, London, E.C.

ELFORD, WILLIAMS, AND CO., COPPER ORE WHARFINGERS,

SHIP BROKERS AND COAL EXPORTERS, METAL AND GENERAL COMMISSION AGENTS, SWANSEA.

ELFORD, WILLIAMS, and Co. having erected an assay office, and engaged the services of a practical Cornish assayer, who will devote his whole time to this branch of their business, they are now in a position to make correct assays of silver, copper, and other mineral ores, on the most moderate terms.

WILTON'S MATHEMATICAL INSTRUMENT ESTABLISHMENT REMOVED from St. Day to A. JEFFERY'S, CAMBORNE.

W. H. WILTON begs to thank his friends for their liberal support for so many years, and informs them that (having opened business at Castella 369, Valparaiso) he has now declined business in England in favour solely of Mr. A. JEFFERY, MATHEMATICAL INSTRUMENT MAKER, CAMBORNE, whom he considers (having been an assistant to his father for several years) is in every way capable of creditably maintaining the good name universally awarded to Wilton's Instruments.

A. JEFFERY

Respectfully begs to inform Mine Managers, Surveyors, Engineers, &c., that having purchased Mr. Wilton's business, and the very valuable acquisitions and appliances belonging thereto, he has enlarged his Mathematical Instrument Manufacture, and is prepared to supply THEODOLITES, DIALS, POCKET DIALS, LEVELS, TRANSVERSING AND PLAIN PROTRACTORS, CASES OF DRAWING INSTRUMENTS, MEASURING CHAINS and TAPES, ASSAYERS' SCALES and WEIGHTS, ENGINE COUNTERS, and, in short, every description of Instruments used in SURVEYING, MEASURING, MAPPING, &c.

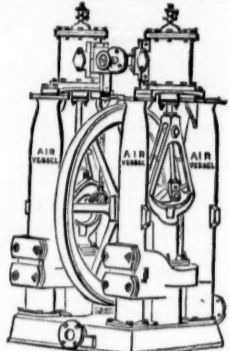
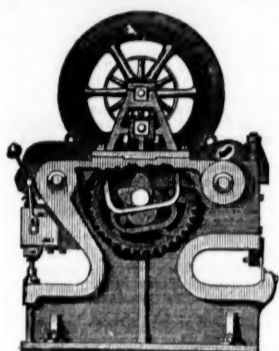
Repairing in all its branches promptly attended to.

BICKFORD'S PATENT SAFETY FUSE

Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at the "INTERNATIONAL EXHIBITION" of 1862, in London; at the "IMPERIAL EXHIBITION" held in Paris, in 1855; at the "INTERNATIONAL EXHIBITION," in Dublin, 1865; and at the "UNIVERSAL EXHIBITION," in Paris, 1867.



BICKFORD, SMITH, AND CO.,
of TUCKINGMILL, CORNWALL, MANUFACTURERS OF PATENT SAFETY-FUSE, having been informed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—
EVERY COIL OF FUSE MANUFACTURED BY THEM HAS TWO SEPARATE THREADS PASSING THROUGH THE COLUMN OF GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS as THEIR TRADE MARK.

**JOHN CAMERON,**

MAKER OF

TEAM PUMPS, PORTABLE ENGINES, PLATE BENDING ROLLERS, BAR AND ANGLE IRON SHEARS, PUNCHING AND SHEARING MACHINES, PATENTEE OF THE DOUBLE CAM LEVER PUNCHING MACHINE, BAR SHEARS, AND RAIL PUNCHING MACHINES,
EGERTON STREET IRON WORKS, HULME, MANCHESTER.

ESTABLISHED MORE THAN HALF A CENTURY.

THE TAVISTOCK FOUNDRY, IRONWORKS AND HAMMER MILLS,

which have been carried on for more than half a century by

MESSRS. GILL AND CO.,

and obtained a

HIGH REPUTATION FOR

SHOVELS AND OTHER TOOLS

as well as for

ENGINEERING AND FOUNDRY WORK

have been purchased by

MESSRS. NICHOLLS, MATHEWS, AND CO., BEDFORD IRONWORKS, TAVISTOCK.

For thirty years Messrs. NICHOLLS, MATHEWS, and Co., have been the proprietors of the latter works, but have now removed to the

TAVISTOCK FOUNDRY,

where, having the advantage of a never-failing stream of water of upwards of 200-horse power, they will have increased facilities for speedily and satisfactorily executing all orders entrusted to their care.

Manufacturers of STEAM ENGINES and BOILERS, on the newest principle pump work, brass and iron; hammered iron shafts, of all sizes; miners' steel and iron tools.

N. M. AND CO. have had a LARGE EXPERIENCE in PREPARING MACHINERY for FOREIGN MINES, as well as selecting competent mechanics to erect the same.

N. M. AND CO. have always a LARGE STOCK of SECOND HAND MATERIALS.

THOMAS TURTON AND SONS,

MANUFACTURERS OF



CAST STEEL FOR PUNCHES, TAPS, and DIES, TURNING TOOLS, CHISELS, &c.
CAST STEEL PISTON RODS, CRANK PINS, CONNECTING RODS, STRAIGHT and CRANK AXLES, SHAFTS and FORGINGS of EVERY DESCRIPTION.

DOUBLE SHEAR STEEL, FILES MARKED
BLISTER STEEL, T. TURTON,
SPRING STEEL, EDGB. TOOLS MARKED,
GERMAN STEEL, WM. GREAVES & SON

Locomotive Engine, Railway Carriage and Wagon Springs and Buffers.

SHEAF WORKS AND SPRING WORKS, SHEFFIELD.
LONDON WAREHOUSE, 35, QUEEN STREET, CANNON STREET, CITY, E.C.
Where the largest stock of steel, files, tools, &c., may be selected from.

JOHN AND EDWIN WRIGHT,

PATENTERS.

(ESTABLISHED 1770.)

MANUFACTURERS OF EVERY DESCRIPTION OF IMPROVED

PATENT FLAT AND ROUND WIRE ROPES

From the very best quality of charcoal iron and steel wire.

PATENT FLAT AND ROUND HEMP ROPES.

SHIPS' RIGGING, SIGNAL AND FENCING STRAND, LIGHTNING CONDUCTORS, STEAM PLOUGH ROPES (made from Webster and Horsfall's patent steel wire), HEMP, FLAX, ENGINE YARN, COTTON WASTE, TARPULING, OIL SHEETS, BRATTICE CLOTHS, &c.

UNIVERSE WORKS, MILLWALL, POPLAR, LONDON.

UNIVERSE WORKS, GARRISON STREET, BIRMINGHAM

CITY OFFICE No. 5, LEADENHALL STREET, LONDON, E.C.

GARNOCK, BIBBY, AND CO.,

MANUFACTURERS OF

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MANILLA, COIR, AND WIRE ROPE,

LIVERPOOL.

MARTYN DENNIS AND CO., THE ALBANY, LIVERPOOL,

SOLE AGENTS FOR CORNWALL AND DEVON.

BRITISH, COLONIAL, AND FOREIGN PATENTS,

REGISTRATION OF DESIGNS, COPYRIGHTS, TECHNICAL TRANSLATIONS, DRAWINGS, &c.

MICHAEL HENRY,

Mem. Soc. Arts. Assoc. Soc. Engineers, Compiler of the "Inventors' Almanac," and the Author of the "Defence of the Patent Law."

PATENT REGISTRATION AND COPYRIGHT AGENT AND ADVISER.

Mr. HENRY has had especial experience in technical French, and in French Manufacturing and Commercial Matters.

Inventors advised in relation to Patents and Inventive and Industrial Matters. Printed Information sent free by post. Specifications drawn and revised.

Searches conducted. Abstracts, Cases, and Opinions drawn.

Offices, 68, Fleet-street, E.C., London, corner of and entrance in Whitefriars-street.

THE IRON TRADE REVIEW.—The Iron Trade Review is now

recognised as the leading organ in which the interests of the iron manufacturers of Great Britain are represented. The aim of the proprietors is to provide a journal which shall be worthy of this important branch of national industry.

The following matters receive special attention:—Detailed reports of the state of trade in all the important manufacturing districts, with latest intelligence of meetings, and price lists of pig and finished iron. Occasional notices of the Continental and American trades. Condensed information relative to the proceedings of railways and other public companies which have a bearing upon the iron trade. Notices of scientific improvements applicable to the manufacture of iron. Reports on such labour questions as may arise. Notes on Parliamentary Bills bearing on the trade. In addition to the above, leading articles on important topics appear in each issue, and great care is taken that the information contained in the Review shall be thoroughly reliable. The annual subscription is one guinea, payable in advance. Advertisements are inserted on reasonable terms, which may be ascertained on application.—Published for the proprietors, at the Iron Trade Review Office, Middlesbrough-on-Tees; and 30, Grey-street, Newcastle-upon-Tyne, by M. and M. W. Lambert, printers.

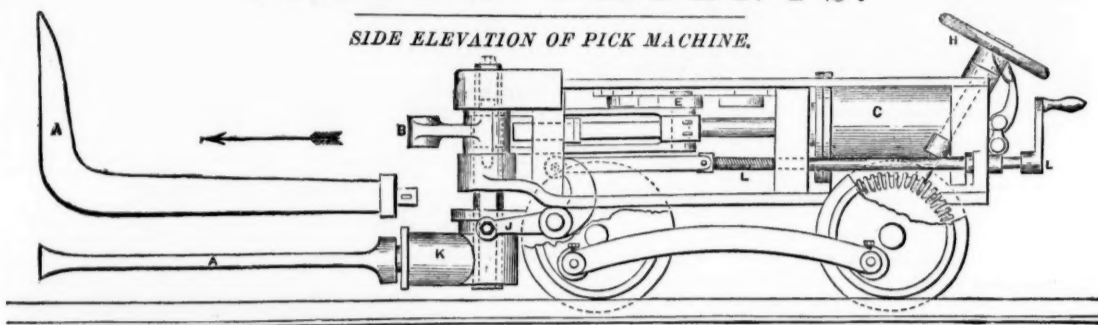
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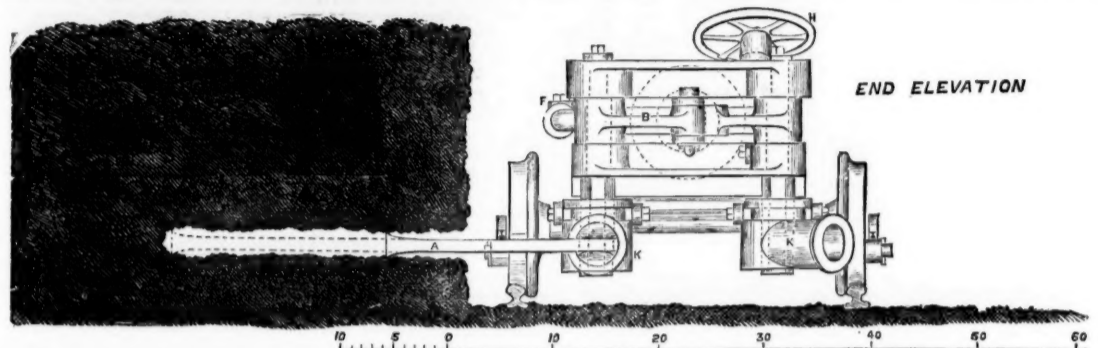
THE DAILY CHRONICLE AND NORTHERN COUNTRIES ADVERTISER.

Office, 42, Grey-street, Newcastle-upon-Tyne; 50, Howard-street, North Shields; 195, High-street, Sunderland.

COMPRESSED AIR COAL-CUTTING MACHINERY. FIRTH'S PATENTS.



SIDE ELEVATION OF PICK MACHINE.



END ELEVATION

These Machines are now working with the most perfect success,

Both practically and commercially.

They are portable, easily managed, and not more liable to get out of order than other ordinary machinery.

They EXPEDITE the OPENING of NEW PITS. There is LESS BREAKAGE of COAL, and a consequent INCREASE in its VALUE, with a DECREASE in its COST of PRODUCTION.

The VENTILATION of THE MINE IS IMPROVED, the RISK of ACCIDENTS DIMINISHED, and the SEVERE PHYSICAL CONDITIONS of COAL-PIT LABOUR are, by the USE of these MACHINES, MODIFIED and MUCH RELIEVED.

For terms of use, and for admission to see the machines at work, apply to—

MR. FIRTH 15, YORK PLACE, LEEDS.

* * One of these Machines has "holed" during the last Twelve Months upwards of 30,000 yards to an average depth of 3 feet 6 inches.

FOR LATHE AND PLANING TOOLS. "R. MUSHET'S SPECIAL STEEL."

SPEED of LATHES may be advantageously INCREASED FIFTY PER CENT., and upwards; it is the most DURABLE STEEL in the Market, and, unlike all other steel, when forged into the desired shape, it

REQUIRES NO HARDENING.

Mushet's Titanic Cast Steel for Lathe Tools, Chisels, Hammers, &c.

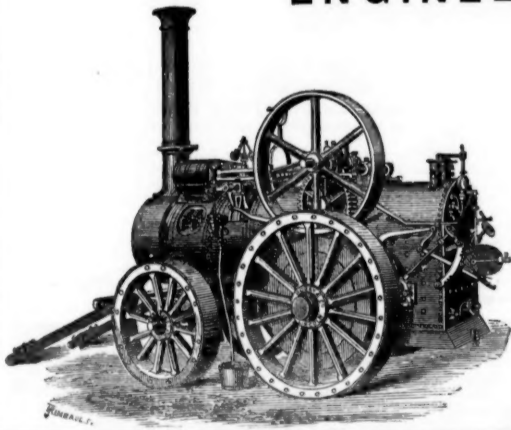
MUSHET'S TITANIC BORER STEEL.

Double Shear Steel; Spring Steel; Blister Steel.

TITANIC STEEL AND IRON COMPANY, LIMITED, FOREST STEEL WORKS, COLEFORD, GLOUCESTERSHIRE.

LONDON: Mr. HENRY MUSHET, LOMBARD EXCHANGE, E.C. GLASGOW: Messrs. JOHN DOWNIE and CO., 1, ROYAL BANK PLACE. NEW YORK: Messrs. CHARLES CONGREVE AND SON, 104 and 106, JOHN STREET.

ROBEY AND COMPANY, LIMITED, ENGINEERS, LINCOLN.



PATENT PORTABLE
HAULING AND WINDING ENGINE,
WITH
PATENT DRUM WINDLASSES,
FOR MINING PURPOSES.

This Engine is specially commended to Mining Engineers and others, as by its adoption—

Haulage along inclined drifts is easily and cheaply effected.

The expense of sinking new shafts is greatly reduced, neither foundations nor engine-house being required.

It is available not only for winding, but for pumping, sawing, &c.—a great desideratum at a large colliery.

It can be very quickly removed (being self-propelling), and fixed in any desired position.

Prices and full particulars on application as above, and also references to view the Engine in successful work near Derby, Carnarvon, Haverfordwest, Darlington, and other places.

A SAVING OF ABOUT FIFTY PER CENT. Is effected by the use of the PATENT DON LUBRICATING OIL,



In place of OLIVE and other kinds ordinarily used on STATIONARY, LOCOMOTIVE, MARINE ENGINES, and MACHINERY of all kinds, and the undersigned are so satisfied of the correctness of this statement, that they are willing, at their own risk, to forward a cask of about 30 gallons for trial to any respectable person or company, on the understanding that it may be returned in a month if it should not answer, when payment would not be required, except for the quantity used.

There are two kinds,—the medium for engines and heavy bearings, and the light for spindles and light work. This oil will lubricate as well, and lasts as long, as olive, neats'-foot, and other expensive kinds, and is superior to rape, which is fully 50 per cent. dearer.

It never "clogs," nor leaves any "GUMMY" deposit upon the bearings, which, therefore, never require cleaning or scraping, whereby much time, labour, and expense are saved. It is in use and approved of by the majority of the iron and coal companies in West Lancashire, where it was first introduced but a few months ago, also by several ocean steamer and ferry proprietors on the Mersey and elsewhere.

Printed particulars and testimonials sent, post free, to any address.

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GWYNNE AND CO., ENGINEERS, ESSEX STREET WORKS, STRAND, LONDON, W.C.

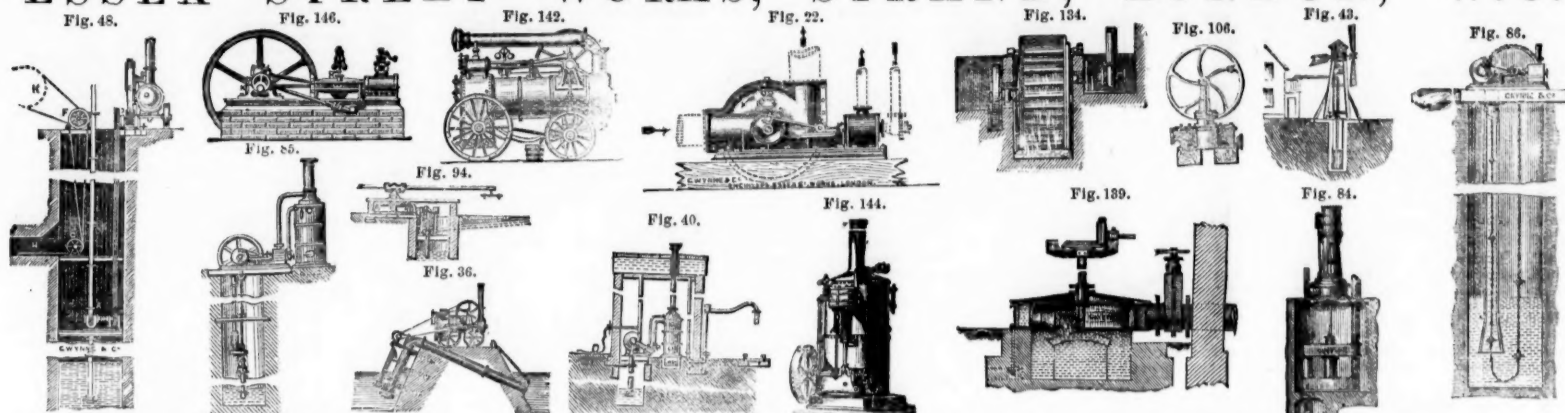


Fig. 144.—Vertical Engine, all sizes, from 2 to 20-horse power.
Fig. 146.—Horizontal Engine, from 4 to 100-horse power.
Fig. 142.—Portable Engine, from 2½ to 30-horse power.
Fig. 40.—Gwynne and Co.'s Combined Stationary Pumping Engine.
Fig. 139.—Turbine Water-wheel, from 1 to 300-horse power.

Fig. 22.—Combined Pumping Engine, all sizes, obtained Prize Medal, Paris Exhibition.
Fig. 85.—Deep Well Pumping Engine, all sizes.
Fig. 134.—Water-wheel Pumping Machinery.
Fig. 36.—Gwynne and Co.'s Patent Syphon Drainage Machinery.
Fig. 95.—Horse-power Pumping Machinery.

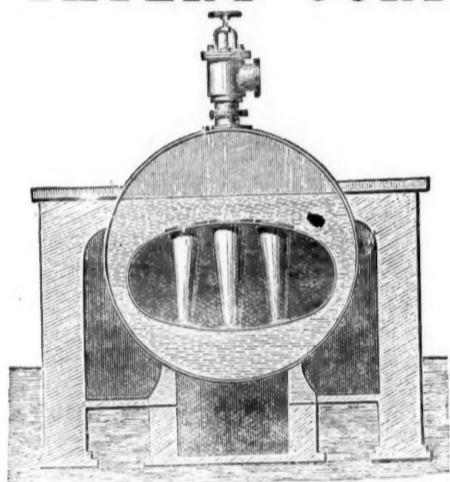
Fig. 86.—Chain Pump Pumping Engine.
Fig. 48.—Deep Mine Centrifugal Pumping Machinery.
Fig. 84.—Double-acting Vertical Pumping Engine.
Fig. 106.—Gwynne and Co.'s Improved Plunger Hand Pump.
Fig. 43.—Wind Power Pumping Machinery.

Steam Engines of all kinds and sizes, Hand and Steam Fire Engines, Water Wheels, Hydraulic Lifts, Cranes and Jacks, Steam and Water Valves, Hydraulic Presses, Sheep Washing Machinery, &c., &c.

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GALLOWAY'S PATENT CONICAL WATER TUBES FOR STEAM BOILERS.



Section of the "Galloway" Boiler, showing arrangement of back flues, the furnaces being of the same construction as in the common two-flued boiler.

The above TUBES are made with such an amount of taper as will allow the bottom flange to pass through the hole in the upper side of the boiler flue, which renders their introduction into ordinary flued boilers a simple operation, and with the following advantages:—
The POWER of the BOILER is CONSIDERABLY INCREASED, and the FLUES ARE MATERIALLY STRENGTHENED.
The CIRCULATION of the WATER is MUCH IMPROVED, and UNEQUAL EXPANSION, with its attendant evils, PREVENTED.
LIABILITY TO PRIME IS LESSENED.

These Tubes have now been in use upwards of fourteen years, and above 50,000 are in work in various parts of the country with the best results.

They can be fixed by any boiler maker, but can only be obtained from the Patentees,

W. & J. GALLOWAY & SONS,
ENGINEERS AND BOILER MAKERS,
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Makers of Wrought-iron Parallel Tubes, 40s. p. cwt.

MANUFACTURERS OF THE WELL-KNOWN

"GALLOWAY BOILER,"

AS PER SKETCH ANNEXED.

UPWARDS OF TWO THOUSAND OF WHICH ARE NOW AT WORK.

BOILERS OF ANY DIMENSIONS, UPON THIS OR ANY OTHER PLAN, CAN BE DELIVERED WITHIN A FEW DAYS FROM RECEIPT OF ORDER.

STEAM ENGINES OF EVERY DESCRIPTION.

General Millwrighting.—Hydraulic Machinery.—Polishing, Grinding, and other Machines for Plate Glass.

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ARRANGEMENT FOR SHAFT SINKING AND QUARRYING.

In STONE of ORDINARY HARDNESS the MACHINE will BORE HOLES at the rate of about SIX INCHES in depth PER MINUTE, and in the HARDEST GRANITE at from TWO to THREE INCHES PER MINUTE. For this a working pressure of 30 lbs. only per square inch is required. In Quarrying and Shaft-sinking the stand is not required, consequently NO TIME IS LOST IN FIXING THE MACHINE.

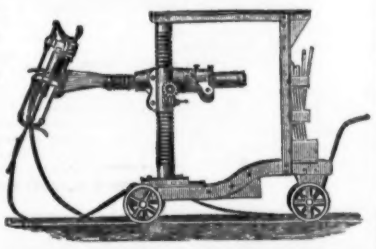
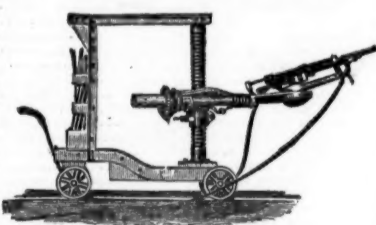
This engine has been used with advantage in the mines of the Vieille Montagne Company in Germany, as well as in Belgium, and at Tincroft Mine, in Cornwall.

Twelve engines are now in course of construction for use in the Dolcoath Mine, in Cornwall.

For further particulars, apply to the sole makers—

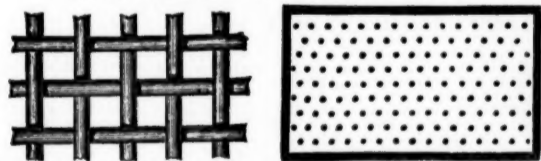
SIMPSON & CO.,
Engineers,
GROSVENOR ROAD,
PIMLICO, LONDON, S.W.,

On whose premises a Machine can be seen in action.



ARRANGEMENT FOR LEVEL DRIVING AND TUNNELLING.

STRONG WIREWORK.



STRONG WIREWORK, the cross wires equally bent; also BEST STAMP GRATES, both of iron and copper, and punched copper plates. DITTO TUBBED. All the above promptly supplied at
W. ESCOTT'S MINING MATERIAL DEPOT,
TAVISTOCK, DEVON.



By a special method of preparation, this leather is made solid, perfectly close in texture, and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of

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25 Don Pedro, £3 6 3 pm	25 Chiv. Moor, £2 12s 6d	19 Great Laxey, £19 1/4.
40 New Lovell, 36s. 3d.	46 No. Treskerby, 10s 9d	120 Prince Wales, 22s. 3d
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30 North Crofty, £1 17 6	20 Drake Walls, 18s.	55 West Maria, 27s. 9d
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SHAFT SINKING THROUGH WATER-BEARING UPPER STRATA, WITHOUT USE OF PUMPING MACHINERY.

CHAUDRON'S PATENT SYSTEM is successful, even in cases previously abandoned on account of overpowering volumes of water.

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Shares.	Mines.	Paid.	Last Pr.	Business.	Total divs.	Per share.	Last paid.
1500	Alderley Edge, c, Cheshire	10 0 0	—	—	10 6 8	0 5 0	Jan. 1889
200	Bottle Hill, c, St. Just	91 5 0	260	250 260	554 5 0	10 0 0	Aug. 1889
12000	Bottle Hill, c, St. Just	1 0 0	—	—	1 2 0	0 1 0	Oct. 1889
4000	Bwlch Consols, c, Cardigan	3 0 0	—	—	0 5 0	0 5 0	June 1889
6000	Cadwaladr, c, Cardigan	2 10 0	—	—	0 6 0	0 6 0	Aug. 1889
916	Cargill, c, Newlyn	15 5 7	13	8 10	16 15 0	0 10 0	Aug. 1889
1280	Chanticleer, c, Flint	0 7 8	—	—	0 10 0	0 10 0	Nov. 1889
2450	Cook's Kitchen, c, Illogan	19 14 9	14	13 13 1/2	2 19 6	0 7 6	Oct. 1889
509	Creechgraw and Penkell, c	—	—	—	2 5 0	1 5 0	April 1889
867	Cwm Erwin, c, Cardiganshire	7 10 0	—	—	31 3 0	0 10 0	Oct. 1889
128	Cwmystwith, c, Cardiganshire	6 0 0	—	—	387 10 0	2 0 0	July 1889
2800	Darwen Mines, c, Durham	300 0 0	—	—	137 0 0	2 10 0	July 1889
1024	Devon Gt. Consols, c, Tavistock	1 0 0	115	115 125	1187 0 0	5 0 0	Sept. 1889
556	Ding Dong, c, Gwent	49 14 6	25	24 25	5 0 0	1 10 0	Sept. 1889
1432	Dolcoath, c, Camborne	32 4 6	127 1/2	123 125	230 2 6	3 0 0	Oct. 1889
12800	Drake Walls, c, Calstock	2 10 0	1	7 1	1 0 0	0 10 0	Oct. 1889
6144	East Caradon, c, St. Cleer	2 14 6	5 1/2	6 1/2	14 11 6	0 2 0	July 1889
300	East Darwen, c, Cardiganshire	32 0 0	—	—	174 10 0	2 0 0	Sept. 1889
4000	East Pool, c, Pool, Illogan	0 9 9	7 1/2	7 1/2	9 9 6	0 3 3	Sept. 1889
1906	East Wheel Lovell, c, Wendron	3 9 0	23	15 1/2	6 16 0	2 0 0	Oct. 1889
2800	Foxdale, c, Isle of Man	25 0 0	—	—	74 5 0	0 15 0	Oct. 1889
2000	Frank Mills, c, Christow	3 10 6	—	—	4 1 6	0 4 0	Nov. 1889
3250	Gawdon, c, Tavistock	3 10 6	—	—	0 3 0	0 3 0	Jan. 1889
15000	Great Laxey, c, Isle of Man	4 0 0	20	19 20	11 5 0	0 10 0	Sept. 1889
3000	Great Northern Manganese	5 0 0	—	—	—	5 p.ct.	Feb. 1889
5908	Great Wheel Vor, c, c, Helston	49 0 0	15	14 1/2	15 1 0	0 10 0	Sept. 1889
1024	Herodfoot, c, near Liskeard	8 10 0	45	43 46	51 0 0	1 10 0	Oct. 1889
12000	Holmbush and Kelly Bray, c	1 0 0	4	—	0 2 0	0 10 0	Sept. 1889
165	Levant, c, St. Just	10 8 1	—	—	1101 0 0	2 0 0	Aug. 1889
4000	Liburne, c, Cardiganshire	18 15 0	—	—	526 0 0	2 0 0	July 1889
3000	Macay-Saif, c, Flint	20 0 0	—	—	4 0 0	0 5 0	Oct. 1889
9000	Mark Valley, c, Caradon	4 10 4	7 1/2	6 1/2	5 13 0	0 4 0	Oct. 1889
3000	Minera Boundary, c, Wrexham	1 0 0	—	—	0 13 0	0 3 0	Mar. 1889
1800	Minera Mining Co., c, Wrexham	25 0 0	—	—	253 13 6	5 0 0	Aug. 1889
20000	Mining Co. of Ireland, c, c, c	7 0 0	13 1/2	12 1/2	—	6 p.ct.	July 1889
40000	Mynydd Iron Ore	3 7 0	—	—	0 11 6	0 3 0	Feb. 1889
3000	North Levant, c, St. Just	10 12 0	—	—	0 15 0	0 10 0	Aug. 1889
300	Parys Mines, c, Anglesey	50 0 0	—	—	162 10 0	2 10 0	Aug. 1889
5000	Penrhall, c, St. Agnes	50 0 0	—	—	0 15 0	0 5 0	Oct. 1889
12800	Prince of Wales, c, Calstock	0 12 6	1 1/2	1 1/2	0 9 0	0 10 0	Aug. 1889
1120	Provident, c, Uney Lelant	10 6 7	39	37 39	94 2 6	1 10 0	Sept. 1889
512	South Caradon, c, St. Cleer	1 5 0	—	—	627 10 0	5 0 0	Sept. 1889
6000	South Darwen, c, Cardigan	3 6 6	2	—	0 17 6	0 1 6	May 1889
937	South Wh. Crofty, c, Illogan	24 10 10	10	8 10	2 10 0	0 10 0	Sept. 1889
496	So. Wh. Frances, c, Illogan	18 18 9	7	5 7	374 13 6	1 0 0	Mar. 1889
242	Spearhead, c, St. Just	36 17 9	20	19 20	11 15 0	1 0 0	Oct. 1889
240	St. Ives Consols, c, St. Ives	10 15 0	13	11 1/2	0 10 0	0 10 0	Feb. 1889
508	Summer Hill, c, Mold	3 19 6	—	—	0 9 0	0 9 0	Feb. 1889
6000	Tincroft, c, c, Pool, Illogan	9 0 0	18	17 1/2	21 11 0	0 10 0	Sept. 1889
2000	Trumpet, c, c, Helston	11 10 0	24	21 22	9 8 0	0 14 0	Aug. 1889
12000	Van, c, Llandilo	4 5 0	39	37 1/2	0 10 0	0 5 0	Sept. 1889
3000	W. Chiverton, c, Perranzabuloe	10 0 0	58	55 56	37 7 6	2 0 0	Aug. 1889
5000	West Godolphin, c, c, Breage	0 10 0	—	—	0 3 0	0 10 0	July 1889
2582	West Great Work, c, Breage	5 11 0	3 1/2	—	0 2 0	0 2 0	June 1889
612	West Wheel Frances, c, Illogan	106 15 0	—	—	4 10 0	1 10 0	Oct. 1889
3000	St. John's Consols, c, Camborne	47 0 0	185	180 185	643 0 0	5 0 0	Oct. 1889
512	Wheal Bassett, c, Illogan	5 0 0	55	50 55	632 10 0	1 0 0	June 1889
1024	Wheal Friendship, c, Tavistock	20 0 0	—	—	800 10 0	0 10 0	Nov. 1889
512	Wheal Jane, c, c, Kea	10 15 0	46	44 46	26 0 0	0 10 0	July 1889
4296	Wheal Kitty, c, St. Agnes	5 4 6	5 1/2	5 1/2	4 3 0	0 5 0	Aug. 1889
1024	Wheal Kitty, c, Uney Lelant	3 10 6	14	14 1/2	11 7 6	0 15 0	Oct. 1889
896	Wheal Margaret, c, Uney Lelant	13 17 6	13	11 1/2	76 15 0	0 10 0	Aug. 1889
1024	Wheal Mary Ann, c, Menheniot	8 0 0	18	16 18	6 10 0	0 10 0	Sept. 1889
1000	Wheal Mar, c, c, Plymouth	2 0 0	—	—	0 10 0	0 10 0	Aug. 1889
80	Wheal Owles, c, St. Just	70 0 0	—	—	424 13 0	0 12 0	Aug. 1889
396	Wheal Seta, c, c, Camborne	58 10 0	37	32 34	254 15 0	2 0 0	Feb. 1889
3000	Whitewell Lead, Clitheroe	0 5 0	—	—	1 0 0	0 10 0	Dec. 1889
17000	Wicklow, c, c, Wicklow	2 10 0	9 1/2	9 1/2	49 6 0	0 5 0	Mar. 1889

FOREIGN DIVIDEND MINES.

35000	Alamillos, l, Spain*	2 0 0	1½	1¼	1½	..	0 8 6	0 2 0	Oct. 1889
20000	Australian, c, South Australia†	7 7 6	—	—	—	..	0 1 6	0 6 0	Aug. 1889
15000	Cape Copper Mining*	7 0 0	17	16½	17½	..	3 17 6	0 15 0	Nov. 1889
30000	Central American Association	0 10 0	—	—	—	..	0 6 0	0 10 0	July 1889
10000	Copiapu Mining Co., Chile†	16 10 0	2½	1½	2½	..	0 4 0	0 4 0	Apr. 1889
7162	Don Pedro North del Rey†	0 14 0	4½	4 ¼	4 ½	..	1 6 9	0 3 6	Aug. 1889
70000	English and Australian, c†	2 10 0	—	—	—	..	1 17 0	0 9 0	Feb. 1889
25000	Fortuna, l, Spain*	2 0 0	2½	2½	2½	..	33 10 0	0 15 0	Oct. 1889
20000	Gen. Mining Assoc., Nova Scotia†	20 0 0	—	—	—	..	23 10 0	0 15 0	June 1889
10000	Gonneta, l, Sardinia*	5 0 0	—	—	—	..	10 p. cent.	—	Aug. 1889
68000	Kapunda Mining Co., Austrat†	1 0 0	1½	¾	1½	..	0 10 0	0 6 0	Nov. 1889
15000	Linares, l, Spain*	3 0 0	2½	2½	2½	..	12 3 4	0 5 0	Oct. 1889
50000	Panuelito, c, Chile†	4 0 0	1½	1½	1½	..	10 p. cent.	—	Yearly
10000	Port Phillip, s, France†	20 0 0	12½	11½	12½	..	6 2 0	0 17 6	Aug. 1889
10000	Port Phillip, c, Clunac†	1 0 0	17½	1½	17½	..	3 6 0	1 6 0	Jan. 1889
10000	St. John del Rey, Calif., Co.†	1 0 0	17½	1½	17½	..	10 p. cent.	—	Nov. 1889
11000	St. John del Rey, Brazil†	16 0 0	18	17½	18	..	81 10 0	4 5 0	Dec. 1887
4000	Swedish Sulphur Ore*	2 10 0	—	—	—	..	7½ p. cent.	—	Dec. 1889
13500	Vancover Coal Mining†	6 0 0	8½	7¾	8½	..	2 14 6	0 12 0	May 1889
50000	Victoria (London) [25000 £1 pd., 25000 12s. 6d. pd.]	1 0 0	—	—	—	..	0 9 7 0	0 7 3 0	July 1889
40000	West Canada Mining Co., *	1 0 0	—	—	—	..	0 19 6 0	0 2 6 0	May 1886